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Part I Conference Schedule

Time: May 30 - June 1, 2022
Location: Xi'an Grand Dynasty Culture Hotel
西安古都文化大酒店

Date	Time	Location: Lobby, 1st floor			
May 30	14:00-17:00	Registration			
Date	Time	Location: Taibaishan Room (太白山厅), 1st Floor	Location: Huashan Room (华山厅), 1st Floor		
		Earth & Geology Keynote Speech Session 1	Psychology Keynote Speech Session 1		
May 31	08:30-12:00	Dr. Youngjin Cha, Dr. Giorgio S. Senesi, Prof. Wenbo Li, Prof. Sudip Basack	Dr. Woon Chia LIU, Prof. Qiuping LI, Dr. Jun Hua, Prof. Ulrich Sollmann, Prof. Darcy Haag Granello & Dr. Paul F. Granello		
		Chair: TBD	Chair: TBD		
		Group Photo & Coffee Break: 09:50-10:10	Group Photo & Coffee Break: 09:50-10:10		
	12:00-13:30	Lunch TBD			
Date	Time	Location: Taibaishan Room (太白山厅), 1st Floor	Location: Huashan Room (华山厅), 1st Floor		
May 31	14:00-18:00	Earth & Geology Keynote Speech Session 2 Prof. Pinnaduwa Kulatilake, Prof. Victor Novikov, Dr. Fadzli Mohamed Nazri, Dr. Upendra K. Singh Chair: TBD	Psychology Keynote Speech Session 2 Dr. Liangmei Chen, Dr. Lan Yang, Dr. Stefanie Chye, Dr. Sampson Lee Blair, Dr. Hugues SCHARBACH Chair: TBD		
		Group Photo & Coffee Break: 16:00-16:20	Group Photo & Coffee Break: 16:00-16:20		
	18:00-19:30	Dinner	TBD		
Date	Time	Location: Taibaishan Room (太白山厅), 1st Floor	Location: Huashan Room (华山厅), 1st Floor		
June 1	08:30-12:00	Earth & Geology Technical Session	Psychology Technical Session		
June I		Chair: TBD Group Photo & Coffee Break: 09:50-10:10	Chair: TBD Group Photo & Coffee Break: 09:50-10:10		
	12:00-13:30	Lunch TBD			

Part II Keynote Speech

Earth & Geology: Keynote Speech Session 1

Keynote Speech 1: Structural Health Monitoring with advanced deep learning

and autonomous UAVs [video]

Speaker: Dr. Youngjin Cha, Dept. of Civil Engineering, University of Manitoba, Winnipeg, Canada Time: 08:30-09:10, Tuesday Morning, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel



Abstract

This online seminar provides deep learning-based structural health monitoring

from crack classification, multiple types of damage classification, volumetric quantification of concrete spalling, crack segmentation, autonomous UAV methods, and their integrations. This presentation introduces deep learning-based approaches for structural health monitoring (SHM) applications. It will introduce a convolutional neural network (CNN) based crack classification, and a faster based CNN (faster R-CNN) based multiple types of damage detection for civil infrastructures to detect and localize the detected damage using bounding boxes. The faster R-CNN was also applied for concrete spalling damage detection for volumetric quantification using depth camera. Autonomous flight method of UAV is introduced to integrate it with deep learning-based damage detection. Subsurface damage detection is introduced using deep learning and thermography. Damage segmentation methods (SDDNet and STRNet) are introduced to detect cracks in pixel level in complex background scenes with real-time manner. These advanced deep learning-based methods overcome the limitation of traditional computer vision-based methods. It also opened the new door for fully automated SHM.

Keynote Speech 2: Geochemistry through the eyes of an handheld Laser-Induced

Breakdown Spectroscopy (LIBS) analyzer [video]

Speaker: Dr. Giorgio S. Senesi, CNR - Institute for Plasma Science and Technology (ISTP) - Bari seat, Italy Time: 09:10-09:50, Tuesday Morning, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Since the late 19th century, the origin of the Earth and the continuing evolution

of its environment have been studied by geologists by analyzing minerals, rocks and soils. Laser-induced breakdown spectroscopy (LIBS) is a versatile geochemical tool able to capture the entire elemental composition of a sample, thus it is used in a wide range of applications, from Mars rovers to earth rock identification. More recently, advanced chemical analytical tools, such as handheld (h) LIBS, have been developed by adapting and upgrading traditional laboratory techniques, which allowed their use in the field. Currently, the availability of reliable analytical instrumentation that can operate directly on site, such as hLIBS, is in high demand. The role and performance of hLIBS devices in the field will be discussed in the context of different research applications while targeting specific questions of geological interest. The fast data acquisition and minimal sample preparation features of these devices make them very attractive candidate tools for qualitative elemental analysis, microchemical mapping and sample selection.

Keynote Speech 3: Hydrothermal graphite leading to the precipitation of gold in

Haoyaoerhudong deposit, Northern China [video]

Speaker: Prof. Wenbo Li, Key Laboratory of Orogenic Belt and Crustal Evolution, School of Earth and Space Sciences, Peking University, China Time: 10:10-10:50, Tuesday Morning, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Haoyaoerhudong is the largest carbonaceous metasediments hosted gold

deposit on the north margin of North China Craton This deposit has reserved more than 7 Moz gold with average Au grade of 0.59 g/t by 2012. Gold mineralization is characterized by lenticular orebodies hosted in the Mesoproterozoic carbonaceous schist, phyllite and slate sequences. Representative hydrothermal alterations are silicification, sulfidation, biotitization and graphitization. Based on the cross-cutting relationship of hydrothermal veins and microscopic observations, four mineralization stages have been identified from Haoyaoerhudong, including the pyrite-pyrrhotite-





nickel sulfides stage (I), quartz-biotite-sulfide stage (II-1), quartz-sulfide stage (II-2), and quartz-carbonate stage (III). Gold was mainly precipitated in stage II-1/2 as free gold associated with hydrothermal pyrrhotite and biotite.

The compositions of fluid inclusions are variable in different stages of vein quartz. Type I fluid inclusions from quartz in stage II-1 are enriched in H₂O-CO₂-CH₄ \pm N₂, whereas Type II fluid inclusions from quartz in stage II-2 are dominated by $H_2O-CH_4 \pm CO_2 \pm N_2$ or $H_2O-N_2 \pm CH_4$. Type III fluid inclusions are rare in the quartz from stage III, with their aqueous phases dominated by H₂O. The homogenization temperature and salinity are progressively decreased from Type I fluid inclusions (315-510 °C, 1.7-18.4 wt.% NaCl), through Type II fluid inclusions (234-334 °C, 1.0-14.3 wt.% NaCl), to the Type III fluid inclusions (98-239 °C, 0.2-11.8 wt.% NaCl). The decrease of CO₂ content in fluid inclusion was accompanied by the precipitation of graphite in hydrothermal veins. Microscope observation and Raman spectra suggest that both the fine-grained graphite from altered schist (Gr-1/2) and coarse-sized graphite from gold-bearing veins (Gr-3/4/5) exhibit a hydrothermal characteristic of high crystallinity. Raman thermometer on graphite has then revealed a fluid cooling history from the quartz - biotite \pm sulfide veins (546 °C) and quartz sulfide veins (495 ℃), to the graphite-bearing altered schist (423 ℃). The modeling of C-O-H hydrothermal system indicates that the graphite from Haoyaoerhudong was precipitated due to the adding of reductive components (e.g., CH₄) and/or the cooling of the CO₂-bearing fluid until it reaches 421 °C. The formation of hydrothermal graphite would significantly consume CO₂ and effectively destabilize the Au-bisulfide complexes. Gold then precipitated in the stage II-1/2 veins and altered schist together with sulfides, graphite, titanite and apatite.

Hydrothermal titanite U-Pb analyses have suggested the gold mineralization in Haoyaoerhudong near 256 Ma, about ~ 13 Ma later than the regional magmatic activity (269 Ma). The δ 13C values of graphite, varying from -27.1 to -26.0 % VPDB, suggest that the carbon was of biogenetic origin. Apatite Sr isotopes (87Sr/86Sr: 0.708293 ~ 0.708842) and titanite Nd isotopes (ϵ Nd(t): -11.76 ~ -14.84) also point out the contribution of sedimentary rocks during mineralization. These geochronological and isotopic analyses demonstrated that the medium to high temperature, low salinity, carbonic fluids were mainly derived from the carbonaceous metasediments. The oreforming fluids may have been heated by Permian biotite granite, but no magmatic contamination was observed. The co-deposition of hydrothermal graphite and gold then features the mineralization style in Haoyaoerhudong deposit.

Keynote Speech 4: COASTAL GROUNDWATER MANAGEMENT AND MODELLING UNDER THE CONSTRAINT OF SALINE WATER INTRUSION [video]

Speaker: Prof. Sudip Basack, Principal, Elitte College of Engineering, Affiliated: MAKA University of Technology, Kolkata, India Time: 10:50-11:30, Tuesday Morning, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Coastal groundwater management requires special attention due to the problem



of saline water intrusion. Since the offshore saltwater and onshore fresh groundwater are of different unit weights, any hydraulic imbalance is likely to initiate a density stratified flow between them. The invasion of saltwater from the sea into the inland freshwater aquifer is termed as 'saline water intrusion', whereas the opposite phenomenon is called 'submarine groundwater discharge'. Excessive pumping operations is coastal regions to withdraw fresh groundwater for domestic, irrigational and industrial usages initiates advancement of the saltwater interface inward, introducing saline water intrusion and associated hazards. The saltwater intrusion is also produced under the action of heavy storm or Tsunami, which initiates invasion of seawater under pressure into freshwater zone. The exposure of aquifer material to saltwater also produces significant alteration in its hydraulic conductivity and other geotechnical and geohydraulic properties, which in turn alters the groundwater flow pattern. A new technique has been introduced by the authors which ensure effective coastal groundwater management. The method includes withdrawal of fresh groundwater by ganat-well structure and recharging the freshwater aquifer by artificial rainwater harvesting. The technique is suitable for localized communities with low to medium population densities. The efficiency of the methodology has been studies in details and relevant conclusions are drawn therefrom.

Keywords: Aquifer, Groundwater flow, Qanat, Rainwater harvesting, Saltwater.

Earth & Geology: Keynote Speech Session 2

Keynote Speech 5: State of the Art on Rock Joint Roughness [video]

Speaker: Prof. Pinnaduwa Kulatilake, Jiangxi University of Science & Technology, China Time: 14:00-14:40, Tuesday Afternoon, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract TBD



Keynote Speech 6: Possible application of electromagnetic triggering phenomena

in seismology for the short-term earthquake prediction [video]

Speaker: Prof. Victor Novikov, Lab of Pulsed Power Systems in Geophysics, Joint Institute for High Temperatures, Russian Academy of Sciences, Moscow, Russia

Time: 14:40-15:20, Tuesday Afternoon, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Earthquakes are the most unpredictable and one of the most devastating natural disasters. Since 1900, 2.3 million people have died in 2,233 earthquakes and due to their secondary effects (tsunami, landslides, fires, etc.) The forecast for the current century is distressing. Over 3 million deaths are anticipated in spite of a progress in earthquake engineering. Today earthquakes are a danger to sustainable development of our civilization. The earthquake hazard mitigation is a great challenge for the scientific community, which concentrated its efforts mainly in two directions: earthquake prediction and earthquake engineering. Today the earthquake forecasting and prediction is an active topic of geophysical research. Long-term forecasts (years to decades) are currently much more reliable than short to medium-term forecasts (days to months). It is not currently possible to make deterministic predictions of when and where earthquakes will happen. For this to be possible, it would be necessary to identify a 'diagnostic precursor' - a characteristic pattern of seismic activity or some other physical, chemical or biological change, which would indicate a high probability of an earthquake happening in a small window of space and time. So far, the search for diagnostic precursors has been unsuccessful. Most geoscientists do not believe that there is a realistic prospect of accurate prediction in the foreseable future, and the principal focus of research is on improving



the forecasting of earthquakes.

Based on laboratory test results and field observation of seismicity triggered by various impacts on the earthquake preparation area the new approach of the short-term earthquake prediction is developed. Among the physical mechanisms of the triggered seismicity an electromagnetic earthquake triggering is considered as a promising direction to solve the problem for specific geoelectrical and geological settings. This approach is based on results of pioneering research carried out in Russia within the last 25 years on the electromagnetic triggering of weak seismicity. The field experiments at different geological settings (Pamir and Northern Tian Shan mountains) and laboratory tests with employment of various equipment (press and shear machines) on injection of DC current into the Earth crust and test samples clearly demonstrated a possibility of earthquake triggering due to impact of electric current pulses on the earthquake preparation area. It should be noted that during strong space weather variations (strong solar flares and geomagnetic storms) the geomagnetically induced currents may occur in the conductive areas of the Earth crust (faults) with the current density similar to the field experiments resulted in electromagnetic earthquake triggering. Thus, it may be concluded that for specific conditions of the earthquake source (the seismogenic fault electric conductivity, fault orientation favorable for generation of maximal geomagnetically induced currents, and subcritical strain-stress conditions in the faults where the strong earthquake is anticipated) and the space weather parameters the earthquake triggering may occur. It is clear that this approach for the short-term prediction is not universal and will work only for specific conditions of the earthquake source. A methodology of the application of proposed short-term prediction is discussed for various seismic prone areas of the globe. Geoscientists are able to identify particular areas of risk and, if there is sufficient information, to make probabilistic forecasts about the likelihood of earthquakes happening in a specified area with sufficient electric conductivity over a specified period of the space weather strong events. These forecasts will be based on data gathered through global seismic monitoring networks, high-density local monitoring in known risk areas, and geological field work, as well as from historical records. The forecasts will improve our theoretical understanding of earthquake physics, and these geophysical models will be verified against filed observations.

The reported study was funded by RFBR, project number 21-55-53053 and NSFC, project number 4201101274.

Keynote Speech 7: An Integrated Framework for Enhancing Community Seismic

Resilience [video]

Speaker: Dr. Fadzli Mohamed Nazri, Universiti Sains Malaysia, Malaysia Time: 15:20-16:00, Tuesday Afternoon, May 31, 2022 Location: Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Seismic resilience is a concept to evaluate the post-earthquake functionality of structures that significantly play a critical role in post-earthquake rescue and



recovery. Indeed, the community is made up of more than just buildings; it is also made up of other sub-systems such as hospital and school facilities as well as roads, drainage systems, sewer systems, and electrical power transmission networks. In recent years, the concept of community resilience as a tool for disaster risk management has attracted substantial attention from all parties, such as governments, designers, decision-makers, and stakeholders. Community resilience can be assessed more effectively by using a multi-disciplinary approach that takes into account the community's uncertainties, as opposed to a single-criteria approach. The global community resilience model must be long-term validated and dependent on the most vulnerable and low-resilience portions of the community, according to a prior study. Based on these resilience studies, the main challenges on the effectiveness of the resilience assessment are the availability and accessibility of the data, the financial resources, and the cooperation from all the parties.

Keynote Speech 8: Uncertainty, stability, sensitivity and resolution Assessment of

individual and joint inversion of VES, MTS and Gravity data using etaheurastic

algorithm over sedimentary basin [video]

Speaker: Dr. Upendra K. Singh, Indian Institute of Technology, India **Time:** 16:20-17:00, Tuesday Afternoon, May 31, 2022 **Location:** Taibaishan Room (太白山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel



Abstract

Direct current resistivity and MT surveys are often used in hydrocarbon, geothermal, groundwater and mining exploration. Usually the interpretation is

accomplished models by individual geophysical methods frequently produces inherent ambiguous models. Therefore, the study of model limitations and of alternative interpretations is a very important issue. This is explained by the fact that two methods model the media under the surface in distinct ways. Vertical Electrical Sounding (VES) is good in marking resistive structures, while Magnetotelluric Sounding (MTS) is very sensitive to conductive structures. Another difference, VES is better to detect shallow structures, while MTS can reach deeper layers. A

Matlab program for 1D joint inversion of VES, MTS and gravity data was developed aiming at exploring the best of both methods. The joint inversion of MT and DC resistivity measurements on a multilayered media by considering two different synthetic data with and without noise and also experimental data over various geological terrains from India and England aiming at exploring the best of both methods based on combined strategy of PSO and GWO known as PSOGWO is attempted. We examined the advantage of joint inversion based new innovative strategy on over inversion using individual data sets. As might be expected, neither of the methods is effective nor resolving deep structures, located beneath the conductive target, when applied separately. The inverted result from PSOGWO, GWO and PSO is similar to the real geological and available borehole condition. Analyzed results with synthetic and real field data show that joint inversion

better recovers simulated models and shows a great potential in geological studies, especially in hydrocarbon studies. The use of a joint inversion of the data yields a better estimate imagine of the true resistivity distribution. Also we found that the joint inversion significantly improves the solution decreasing the ambiguity of the models and yield better results.

Psychology: Keynote Speech Session 1

Keynote Speech 1: Autonomy-supportive teachers: Who are they and when are

they autonomy-supportive? [video]

Speaker: Dr. Woon Chia LIU, National Institute of Education (NIE), Nanyang Technological University, Singapore Time: 08:30-09:10, Tuesday Morning, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Teachers have always played a crucial role in the classroom. They engage

directly with students, and structure the classroom environment that these students come to and learn from every day. Their motivating styles can affect students' motivation, learning, emotion, and performance. A teacher's autonomy-supportive style has been found to be associated with a wide range of important student benefits, while a teacher's controlling or pressuring style is associated with a wide range of important student costs. Research has shown that a number of factors influence teachers toward a more autonomy-supportive or a more controlling motivating style. These influential factors can be categorized as "factors from above" (e.g., principals, school climate, and social contextual performance pressures), "factors from within" (e.g., teachers' need satisfaction, teachers' causality orientation) and "factors from below" (e.g., students' in-class displays of motivation, engagement, and prosocial behavior).

Using Singapore as the context, the address will take a closer look at the antecedents of teachers' motivating styles. Research findings will be shared, together with challenges and considerations for policy makers, school leaders and educators.

Keynote Speech 2: Implications for self-efficacy intervention: findings from the

experience and needs of colorectal cancer patients and spousal caregivers [video]

Authors: Jiali GONG & Prof. Qiuping LI, Wuxi Medical School, Jiangnan University, Wuxi, Jiangsu Province, China Presenter: Jiali GONG Time: 09:10-09:50, Tuesday Morning, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Colorectal cancer (CRC) patients and spousal caregivers suffer from the double whammy of cancer





and the COVID-19 pandemic. Self-efficacy (SE) interventions may be an effective means of addressing escalating challenges. The aim of this report was to identify the experiences and needs of CRC couples to enrich the SE intervention program with a view to providing the best SE support possible for CRC patients and spousal caregivers. Qualitative interview design was applied. Data were collected from 11 colorectal cancer couples. We audio recorded all interviews and transcribed, coded and analyzed the interviews using NVivo 12.0. Three themes and eight subthemes emerged: (a) get and contribute support, (b) life's challenges, and (c) Reflections and rebuilding. CRC couples have encountered challenges in coping with cancer. At the same time, they have received considerable support and developed confidence in rebuilding themselves in the process. Healthcare providers should focus on giving appropriate support for CRC couples, so they can go further. This study gave insights to healthcare providers on the experiences and needs of CRC couples and the development of SE intervention programs to support these couples: (1) actively identify CRC couples' needs and preferences, (2) offer support for patients' psychological well-being in the early stages of a cancer diagnosis, and pay attention to spousal caregivers' health, (3) interventions should be accessible and acceptable, and (4) provide CRC couples with the opportunity to communicate with their peers, as learning vicariously, from others' experiences, is essential.

Keynote Speech 3: Imaging neurovascular abnormalities in the brain in

schizophrenia [video]

Speaker: Dr. Jun Hua, Johns Hopkins School of Medicine, USA Time: 10:10-10:50, Tuesday Morning, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

In this talk, I will describe our recent discovery of neurovascular abnormalities in the brains of schizophrenia patients using advanced high field MRI

techniques. First, the functional connectivity between the thalamus and the prefrontal cortex decreased significantly in schizophrenia patients compared to matching controls. In contrast, the functional connectivity between the thalamus and the motor/sensory cortex increased significantly in schizophrenia patients compared to matching controls. Second, the microvascular abnormalities underling the functional connectivity changes are evaluated using the inflow-based vascular-space-occupancy (iVASO) MRI method developed by us to measure changes in the volume of small arterial (pial) and arteriolar vessels (CBVa) in the brain. We found significantly decreased CBVa in multiple areas across the whole brain in schizophrenia patients.



Keynote Speech 4: Facing sexual assault and harassment: A psychological and

bodily approach to trauma (prevention) and resilience [video]

Speaker: Prof. Ulrich Sollmann, Shanghai University of Political Science and Law, China Time: 10:50-11:30, Tuesday Morning, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

The lecture is based on the concept that in stressful or traumatic situations our



body is genetically encoded to contract in order to protect itself. After the stressful situation is over, we are supposed to release such contractions and come back to an optimal state of balance and relaxation. However, the way that the body releases is through tremoring and shaking (similarly to what we feel building up in our body when we are nervous, afraid or excited) and, since we are conditioned to believe that shaking is a sign of weakness or disease, we tend to unconsciously inhibit this healing response. By doing specific exercises we reactivate this natural releasing mechanism with often immediate and profound results. People report sleeping better, getting rid of pain and aches, the healing of sciatica, a lessening of anxiety and depression, feeling calmer and less reactive, and a release of deep chronic tension. The tremors release tension all over the body and in particular in the psoas muscle, the main muscle of fight or flight. The lecture describes and explains this process and offers guidelines of a very practical self-help-concept.

Keynote Speech 5: Reintegration of Students into Schools Following a Suicide

Crisis [video]

Speaker: Prof. Darcy Haag Granello & Dr. Paul F. Granello, The Ohio State University, USA Time: 11:30-12:10, Tuesday Morning, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Adolescent suicide continues to be a significant public



health problem throughout the world. In the midst of the pandemic and its aftermath, rates of adolescent suicide and attempts continue to increase. In this presentation, the Director of The Ohio State University Suicide Prevention Program and her colleague, a professor who works with public schools to help teach students how to manage anxiety to lower suicide risk, will discuss how to reintegrate students back into schools following a suicide crisis. The presenters have published widely on the topic of suicide, have presented over 400 times nationally and internationally on

suicide prevention and intervention, and have co-authored a forthcoming book on Comprehensive Approaches to Suicide Programming in K-12 Schools (Oxford University Press, 2022).

Students who experience suicidal crises are often removed from the school setting. Returning to school following a mental health crisis can be difficult academically and very stressful interpersonally. This presentation will discuss how to develop a plan for reintegrating a student back into the school setting. Strategies for working together as a team to help students be successful academically and socially will be provided. The importance of school policy for students returning from a suicidal crisis will be discussed along with the need to create an environment that supports what the student has learned while in treatment. Finally, practical techniques and interventions will be shared that may help the student to readjust to the school setting, reduce the risk of escalation, and limit the potential for suicide contagion.

Psychology: Keynote Speech Session 2

Keynote Speech 6: Retrospective analysis of mental disorder patients with

"combination of medical care and nursing care"

Speaker: Dr. Liangmei Chen, Xi'an Mental Health Center, Shaanxi Province, China

Time: 14:00-14:40, Tuesday Afternoon, May 31, 2022 **Location:** Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel



Abstract

Authors: Chen Liangmei, Wang Guodong, Dai Zunxiao

Objective: To analyze the basic situation of patients with mental illness who have the demand of combination of medical care and nursing services. **Methods:** A retrospective analysis was performed on the disease types, course of disease, age and marital status of 600 inpatients in our hospital in recent 3 years. **Results:** In these patients, schizophrenia patients, 347 times, accounting for 57.8% of the total number of patients, followed by dementia patients, 154 times, accounting for 25.7%; Course of disease \geq 30 years, 313 cases, accounting for 52.2% of the total number of patients, course of disease \leq 10 years, 52 cases, accounting for 8.6%; Most patients were over 60 years old: 411 patients (68.5%); Under 60 years old: 189, or 31.5%; 130 patients were married, accounting for 21.7%, and most of them were single, accounting for 78.3%; Single people were divided into: 209 divorced cases, accounting for 34.8%; Widowed 104 (17.4%); 157 cases were unmarried, accounting for 26.1%. Conclusion: At present, the patients with mental disorders, chronic and elderly patients with schizophrenia, who have a long course of disease, are more single.

Keywords: Geriatric mental disorde, combination of medical and care, schizophrenia.

Keynote Speech 7: From teacher feedback to student emotional well-being: An

integrated perspective of feedback orientation and learning-related emotions

[video]

Speaker: Dr. Lan Yang, Department of Curriculum and Instruction, EdUHK, China Time: 14:40-15:20, Tuesday Afternoon, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

The powerful influence of feedback on student achievement has been evident



in Hattie's (2009) synthesis study by analyzing a variety of influences from over eight hundred meta-analyses. Consistently, Hattie (2017) found feedback has a high effect size of .70, which is above the average effect size of .40 among over 200 influences on student learning and achievement. Despite its power, many researchers argue that feedback's effect on student achievement might not be linear, and students' feedback perceptions matter in the process to uptake feedback (for updated reviews, see Lui & Andrade, 2022; Van der Kleij & Lipnevich, 2021; Yang, 2022). This study took an integrated perspective of feedback orientation (Linderbaum & Levy, 2010; Yang et al., 2014) and achievement emotions (Pekrun et al., 2011) to assess students' emotional well-being (i.e., the emotional quality of individual students' experiences of learning) in school settings. We examined the relations among students' perceptions of teacher feedback (e.g., feedback utility, feedback self-efficacy, feedback accountability, and feedback social-awareness) and three positive emotions (enjoyment, hope, and pride) in learning situations. We surveyed over 3000 secondary students in mainland China. The results showed significant positive correlations among the four feedback orientations and three positive emotions. Two further SEM analyses revealed students' perceived feedback usefulness was the strongest predictor of positive emotions, followed by feedback accountability and self-efficacy to use teacher feedback. Specifically, feedback utility appeared to be the strongest predictor of learning-related enjoyment, hope, and pride. Feedback accountability predicted enjoyment most, followed by hope and pride. Feedback self-efficacy predicted learning-related hope most, followed by enjoyment and pride. Unexpectedly, feedback social-awareness was not a significant predictor of the three positive emotions after controlling the other three feedback orientations. The results indicated the significance of understanding students' feedback orientations to unpack its power in affecting students' positive emotions as essential indicators of emotional well-being in learning. We will discuss detailed implications and future directions in the presentation.

Keywords: Feedback orientation, emotional well-being, achievement emotions, Chinese students

Keynote Speech 8: Developing the Self-Regulated Teacher: Potentials and

Possibilities of the Digital Portfolio [video]

Speaker: Dr. Stefanie Chye, National Institute of Education, Nanyang Technological University, Singapore Time: 15:20-16:00, Tuesday Afternoon, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

The importance of self-regulated learning (SRL) for the development of

expertise and lifelong learning has been highlighted by researchers. Teachers who are self-regulated are active agents in their learning process, which involve attempts to monitor and regulate their cognition, motivation, emotions and behavior with respect to their learning goals and contextual conditions.

In the area of SRL, there has been an increased interest in digital tools given their affordances for the prompting and scripting of SRL processes. Instead of delivering explicit instruction in the functional and knowledge base of self-regulation as is the case with many attempts to develop SRL, these tools support SRL by engaging individuals in self-regulatory practices and activate key regulation processes. The digital tools increase awareness of an individuals own and others' learning processes; enables individuals to articulate their own learning on both an individual and a social plane, thus allowing for the co-construction of knowledge and more social forms of regulation to take place. These technological tools further support processes as reflection, inquiry, planning, goal-setting, monitoring and evaluation.

To advance teacher learning, development and expertise, it is advocated for systematically examining the Digital Portfolio and how it can support teachers in their development of SRL. In considering the potential of the Digital Portfolio, illustrations will be taken from the context of teacher education in Singapore with implications for policy, technology and pedagogy considered.

Keynote Speech 9: Changing Policies and Changing Preferences: Fertility

Aspirations among Young Adults in China [video]

Speaker: Dr. Sampson Lee Blair, Department of Sociology, The State University of New York (Buffalo), USA Time: 16:20-17:00, Tuesday Afternoon, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

During their late adolescent and early adult years, young women and men in







China are often focused upon their adult status goals. In doing so, they must decide upon their preferences for educational attainment, careers, and, among the most personal and intimate of preferences – marriage and parenthood. Although sociologists and anthropologists often refer to marriage and childbearing as "cultural universals," suggesting that everyone feels compelled to marry and have children, the patterns of marriage and childbearing in China, over recent decades, actually demonstrate a divergence from such normative expectations. Over recent years, there has been a significant increase in the rates of premarital sex and cohabitation across China, and young adults often feel inclined to pursue their own individual desires within intimate relationships. In addition, recent decades have also seen a steady decline in the rates of marriage, accompanied by a sharp rise in rates of divorce and separation. The larger social context in which young people develop aspirations for intimacy, relationship, and fertility choices has changed substantially over the past several decades.

Since the 1970s, government policies have attempted to curtail the total fertility rate in China and, overall, these policies have proven to be quite effective in achieving their goals of a lower number of births. The "Wan, Xi, Shao" (Later, Longer, Fewer) campaign encouraged adults to wait longer before having children, have longer intervals between births, and have fewer children. This campaign was followed by the One-Child Policy, along with its various iterations, and the ensuing policies were oriented around lowering the total fertility rate. However, due to the increasing size of the elderly population, along with other demographic issues, a Two-Child Policy was introduced in late 2015, and was followed by the Three-Child Policy of 2021. The newer policies were intended to encourage adults to bear more children, rather than fewer. However, within the context of modernization, and coupled with increasing tendencies toward individualism, young adults have not responded with a higher number of births.

Using data from a multi-year study of young women and men enrolled in colleges and universities across China, this study examines the fertility aspirations of young adults, along with the various factors which are affecting such aspirations. The analyses show that, from 2015 through 2021, the desired number of births among young adults has steadily declined. Concurrently, aspirations for marriage have also declined, suggesting that traditional expectations of marriage and childbearing are undoubtedly changing. Although parental influence is shown to be significant in affecting the fertility aspirations of young women and men, both peer and individual factors are also shown to be quite influential. The findings are framed with the developmental paradigm, and the implications for future fertility patterns, along with other demographic change, are discussed.

Keynote Speech 10: MATRICIDES and Affective Enigme in Intra-Family

Exchanges and their History Relatedness and Differences [video]

Speaker: Dr. Hugues SCHARBACH, PARIS's University, France Time: 17:00-17:40, Tuesday Afternoon, May 31, 2022 Location: Huashan Room (华山厅), 1st Floor, Xi'an Grand Dynasty Culture Hotel

Abstract

Combining for 45 years a practice of care, in particular directing a general then child psychiatry service in an university hospital center, with functions of



teaching but above all of expert in pharmacology, where the methodology of the studies of new molecules is rigourous and as forensic expert near the Courts of NANCY, then of RENNES-NANTES and of cassation as national expert, we carried out now 6000 expertal examinations. Some of them, paradigmatic, were published in articles but also in the three tomes of: "Psychiatric and medicopsychological Expertises" (Lacassagne, then ESKA PARIS), being currently reissued.

We relied on our knowledge of psychological approach, having also defended a thesis on "BSD and Loneliness's Feelings" (translation of the french title) printed and published since 1988: "Loneliness's Feelings by Borderline Subjects" ALEIKHO NANTES after having written the national report of (Psychiatry of french language) on Borderline Disorders by adults and children the previous year (1983; MASSON.)

The expert examination includes a reminder of the facts, the careful biographical study, the discussion concerning the psychopathological features and the traits of the personality -eventually the clinical aspects and symptoms and their etiopathognesis. It's also to study the circumstances having combined in the setting up, in tortious or criminal transgressive act and, in conclusion, to give answer to the ten questions asked, in particular on the organization of the personality, on the possible abolition or alteration of discernement, on the dangerousness, on the opportunity as well as the accessibility to care.

We choice to illustrate our presentation by studying two cases of MATRICIDES. (without forgetting to quote here the case of the PAPIN's sisters, who in a way, killed their socio-professional mothers (Thesis by J. LACAN)

This type of crime is rarely commited...

In Conclusion:

These subjects, always present narcissitic flaws constituted early, with egocentric aspects of the personality, masking an intimate suffering and a problematic of absence linked to a poor coherence of internal objects, that often despite appearances.

Part III Technical Sessions

Earth & Geology: Technical Session

Session Chair: TBD Location: Taibaishan Room (太白山厅), 1st Floor 08:30-12:00, June 1, 2022 Time **Paper Title** Affiliation Author Global path planning for emergency rescue in Shisheng Feng Information Engineering Oral off-road environment based on improved A University, Zhengzhou, Henan, China algorithm Oral Daozheng Laboratory flume experiments on the State Key Laboratory of characteristics of large wood accumulations Wang Continental Dynamics, from debris flow and the backwater rise at Department of Geology, slit-check dams Northwest University, Xi'an, China Oral Development and evolution characteristics of Tianjiao Zhang Geophysical Research overpressured top seal in faulted basin-A Institute, Sinopec case study of Niuzhuang Sub-sag in Shengli Oilfield **Dongying Sag** Company, Dongying, Shandong, China Paleo-pressure Gradient Evolution and Oral Yuelin Feng Research Institute of Petroleum Exploration Controls on Hydrocarbon migration of Paleogene Strata in the Bonan Sag and Development, Sinopec Shengli Oilfield Company, Dongying, Shandong, China 09:50-10:10 **Group Photo & Coffee Break** Oral Research on semi-aeronautical transient Yi Jiang Key lab of Earth electromagnetic adaptive regularization Exploration & inversion algorithm Information Techniques of Ministry of Education, Chengdu University of Technology, Chengdu, China Oral Research on Ubiquitous Map Information Si Wang Institute of Geographical

	Organization Oriented to Location-Based Aggregation		Spatial Information, Information Engineering University, Zhengzhou, China
Oral	Research on Ubiquitous Map Visualization for Ternary Space	Si Wang	Institute of Geographical Spatial Information, Information Engineering University, Zhengzhou, China
Poster	Study on diagnosis Weather Process and Flight Impact of Heavy Snowfall in Northeast China "11/2021"	Xiaohui Zhang	Air Force Aviation University, Changchun, China
Poster	Interaction mechanism between formation process of bank collapse disaster chain and territorial space utilization of large reservoirs*	Taiyi Chen	China University of Geosciences, Wuhan, China
Poster	Seismic wavelet analysis based on finite element numerical simulation	Junguo Du	BGP Southwest Geophysical Branch, CNPC, Chengdu, China
Poster	Acquisition practice of high signal-to-noise ratio in YTB block of Sichuan Basin	Jun Wu	BGP Southwest Geophysical Branch, CNPC, Chengdu, China

Psychology: Technical Session

Session Chair: TBD

Location: Huashan	Room (华山厅), 1st Floor	08:30-12:00, June 1, 2022		
Time	Paper Title	Author	Affiliation	
Oral	Research on the development trend of long-term care for the elderly in China based on content analysis	Mingli Zhu	Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, China	
Oral	17β -estradiol inhibits H ₂ O ₂ -induced senescence in HUVEC cells through upregulating SIRT3 expression and promoting autophagy	Xiuting Xiang	University Malaysia Sabah, Malaysia	
Oral	Intervention effect of audio motor brain stimulation training on cognitive impairment and negative psychology of rural elderly	Xijun Hao	Department of Nursing and Rehabilitation Medicine, North China University of Science and Technology, China	
Video	Work-Life Balance Issues of Women in Returning to Work due to Childbirth Using TEM Analysis	Yaguang Yan	Graduate School of Business Administration, Ritsumeikan University, Osaka, Japan	
09:50-10:10	Group Photo & Coffee Break			
Poster	Associations between urinary caffeine and caffeine metabolites and cognitive function in older adults	Xihang Fu	Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China	
Poster	The mediating roles of social support and security in the relationship between negative life events and life satisfaction among left-behind children: a cross-sectional study	Na Liu	School of Nursing, Binzhou Medical College, Yantai, China	

Part IV Technical Session Abstracts

Earth & Geology

ID: CSG2022_20000

Title: Global path planning for emergency rescue in off-road environment based on improved A algorithm Name: Shisheng Feng

Affiliation: Information Engineering University, Zhengzhou, Henan, China Email: 357885009@gq.com

Abstract

The occurrence of the natural disasters has caused great loss of lives and property of the affected people. In order to improve the efficiency of the emergency rescue, the road planning problem for emergency workers, vehicles and other mobile objects should be solved first.

Conventional emergency rescue path planning research mostly based on the identified road network, mainly rely on experience and conduct qualitative or semi-quantitative analysis from time, cost, risk and other aspects, which do not emphasize the emergency rescue characteristics such as weak economy and strong timeliness and so on. Moreover, earthquakes, mudslides and other destructive natural disasters may damage the original road network and cause traffic disruption, especially plateau mountain area with fewer roads than plain areas, which has lower alternatives and be more sensitive to natural disasters. While the road network is destroyed or does not existed, decision makers are required to fully understand the present geographic environment by analyzing the topographical data. Accurately and quickly assess the prevailing situation and provide reasonable advice for major disaster emergency rescue path planning so that appropriate action can be taken in a timely manner. Therefore, in the roadless environment, disaster emergency rescue path planning based on topographical data is particularly important. Nowadays, researchers have carried out a series of exploratory research on the pan planning problem under the roadless environment, but there are still some shortcomings.

Based on the characteristics of strong timeliness and no road network in emergency rescue path planning, this paper studies the shortcomings of path planning in the roadless environment. Firstly, the traffic analysis of the environment without road network is carried out. The process includes the use of terrain and geomorphologic data to complete environmental modeling, the comprehensive consideration of the traffic relationship between the environment and the maneuvering object and the formulation of traffic evaluation rules, so as to realize the evaluation of environmental trafficability and traffic efficiency. Subsequently, the A* algorithm is improved with the traffic efficiency as the influence weight and timeliness as the goal, which effectively improves the computational efficiency and realizes the rapid path planning in the roadless environment, providing decision-making services for the path planning of disaster emergency rescue. On this basis, the emergency rescue path planning system in the roadless environment is developed and experimentally verified.

Keywords: emergency rescue; path planning; environmental traffic analysis; improvement of the A* algorithm

ID: CSG2022_20001

Title: Research on Ubiquitous Map InformationOrganizationOriented to Location-BasedAggregation

Name: Si Wang, Guangxia Wang

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Abstract

In the era of information and communication technology (ICT) and big data, the map gradually shows a new qualitative feature of "spatiotemporal ubiquitous" due to the extension of its object space and the geographic information it contains, which brings new challenges to map information organization. This paper analyzes the concept and information characteristics of the ubiquitous map. Based on that, it proposes a ubiquitous map information organization model oriented to location-based aggregation. This new model includes parts as "ubiquitous three map instance", "location-based aggregation mode" and "map scene". This paper focuses on the "map scene" part which is the core of the model and contains two mutually mapped aspects as "content scene" "representation scene". And both aspects are divided into three levels as "features" $\leftrightarrow \rightarrow$ "elements" $\leftrightarrow \rightarrow$ "scenes" according to ubiquitous map information characteristics and location-based aggregation mode. With cases of map decomposition, the application of the model is explained to illustrate its effectiveness. The model is expected to provide powerful data organization and management capabilities for ubiquitous map production and use.

Keywords: Ubiquitous Map, Information Organization, Location-Based Aggregation, Map Scene

ID: CSG2022_20002

Title: Research on Ubiquitous Map Visualization for Ternary Space

Name: Si Wang, Guangxia Wang

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Abstract

In the era of information and communication technology (ICT) and big data, the map gradually shows a new qualitative feature of "spatiotemporal ubiquitous" with the extension of its object space, expression space and information source, which challenges the theory of cartographic visualization. This paper discusses the ubiquitous map visualization from the object content and expression form. Oriented to the ternary space, it divides the object dimension of ubiquitous map visualization and analyzes the expression characteristics of ubiquitous map visualization. Based on that, it constructs the variable system, symbol system and method system of ubiquitous map visualization. With three cases of the metro roadmap, the tag map, and the three-dimensional (3D) city map, the application of the proposed content is explained to illustrate its effectiveness. The research in this paper is expected to further enrich the theoretical basis of cartographic visualization and provide theoretical support for the expression and application of ubiquitous map visualization.

Keywords: Ubiquitous Map, Ternary Space, Visualization, Variables, Map Symbol, Scene

ID: GRP2022_20000

Title: Interaction mechanism between formation process of bank collapse disaster chain and territorial space utilization of large reservoirs*

Name: Taiyi Chen

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Abstract

Number of reservoirs in China ranks first in the word. Due to the complex geology, and superimposing rainfall and reservoir water fluctuation, the bank collapse chain is prone to disasters. The Yangtze River Reservoir is key geological disaster prevention area. Studying the process of reservoir disaster is significant because of the limited territorial space utilization. Scientific and technological issues, i.e., the mechanism of bank collapse disaster chain of large reservoirs, the interaction mechanism of bank collapse disaster chain and territorial space utilization, the early identification, monitoring technology and ecological prevention and control technology system of disaster chain, and the territorial space geological safety and control technology system are focused. Considering the material transformation, energy transfer and information transmission in disaster chain, adopt the survey, Space-Air-Ground integrated monitoring, theoretical analysis, numerical simulation and the multidisciplinary research methods. Aim to reveal the chain source development, evolution process of secondary and derivative disasters. Explore the interaction mechanism of disaster chain and territorial space utilization. Construct the system of early identification, monitoring, early warning, control and ecological prevention to achieve Emission Peak and Carbon Neutrality. Provide theoretical and technical support for the territorial space geological safety, regulation and utilization of large reservoirs.

Keywords: The large reservoirs, Disaster chain, Disaster-causing mechanism, Territorial space utilization, Ecological prevention

ID: ICGG2022 20001

Title: Seismic wavelet analysis based on finite element numerical simulation

Name: Junguo Du, Jun Wu, Longjiang Jing, Shuqin Li, Qiang Zhang

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Abstract

The practice of exploration and production has proved that explosives are excited in different surrounding rocks and the seismic wavelets collected have different characteristics. In this paper, by establishing a numerical model of the explosion in the well, using finite element analysis technology for numerical simulation, the simulation calculated the stress structure in the near-source area of the earthquake excitation, and extracted the seismic wavelet. The results show that the simulation seismic wavelet characteristics of different thin interbedded sand and mudstone structures have changed significantly. Through excitation simulation, the amplitude and spectrum information of seismic wavelets can be compared and analyzed, and the excitation parameters can be optimized.

Keywords: finite element method; seismic wavelet; numerical simulation; thin interbed

ID: ICGG2022_20003

Title: Development and evolution characteristics of overpressured top seal in faulted basin — A case study of Niuzhuang Sub-sag in Dongying Sag

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Abstract

The overpressure phenomenon of Paleogene strata in Niuzhuang sub-sag is very common. According to the logging response characteristics of mudstone in overpressure area, the vertical distribution of overpressured top seal is analyzed. On this basis, Its petrological characteristics and sealing capacity are discussed, and the evolution process of overpressure top seal is analyzed by using paleo-pressure recovery. The results show that: the buried depth of overpressured top seal layer in Niuzhuang sub-sag is mainly 2700-3600m, which is characterized by deep center and shallow edge in plane. Its lithology is a combination of dark grey, grey mudstone and sandy mudstone. There are a large number of carbonate cements and clay minerals in the argillaceous rocks that form the top sealing layer. The diagenesis of mudstone occurs in the rapid transformation period of illite/smectite mixed layer minerals, and corresponds to a large number of carbonate cements. The displacement pressure, thickness and diagenetic intensity of overpressured top seal are important factors affecting its physical sealing ability. There are five evolution stages of overpressured top seal, namely, at the initial stage of settlement, the strata are

normally compacted, and the development of overpressured top seal is not obvious; During the first stage of accumulation, the low-amplitude hydrocarbon generation in the deep sag was supercharged, and the overpressured top seal was initially formed. Intermittent period of reservoir formation, overpressure top seal uplift erosion; During the rapid subsidence period, the strata are undercompacted to form overpressure, and the overpressure top seal is re-formed. During the second stage of storage, the thickness of overpressure top seal increased to the maximum

Keywords: Niuzhuang Sub-sag; Overpressured top seal; petrological characteristics; evolution stages

ID: ICGG2022_20004

Title: Paleo-pressure Gradient Evolution and Controls on Hydrocarbon migration of Paleogene Strata in the Bonan Sag

Name: Yuelin Feng

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Abstract

In order to quantitatively characterize the relationship between overpressure and hydrocarbon distribution, based on the prediction of formation fluid pressure in Bonan sag, Bohai Bay Basin, the paleo-pressure gradient of the third member of Shahejie Formation (Es3) is calculated, and the variation law of paleo-pressure gradient and its influence on hydrocarbon distribution are analyzed. The results show that the overpressure developed in the Bonan Sag during the main hydrocarbon migration stage (4.2Ma-now), paleo-pressure gradient of Es3x is higher than that of Es3z. As different structural zones, the high paleo-pressure gradient is often developed in the Bonan Sag where is the active source area. The values of paleo-pressure gradient of Boshen 4 stepped belt and North steep slope is relatively gentle. The paleo-pressure gradient in South gentle slope is

generally low. In the source area of the Es3x where the paleo-pressure gradient shows high hydrocarbon containing, and that of the Es3z where the hydrocarbon distribute circularly, this relationship is opposite. The high paleo-pressure gradient in the near source area represents a strong reservoir-forming power, and the hydrocarbon distribute contiguously. The relationship between the paleo-pressure gradient and the hydrocarbon containing in the far source area are weak.

Keywords: Bonan Sag; Paleo-pressure recovery; Paleo-pressure gradient evolution; Hydrocarbon migration

ID: ICGG2022_20007

Title: Laboratory flume experiments on the characteristics of large wood accumulations from debris flow and the backwater rise at slit-check dams

Name: Daozheng Wang, Xingang Wang

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Abstract

Large wood is an important component of headwater streams in forested mountain regions and currently considered as an important composition of debris flow due to the fact that the most serious disasters are associated with it. The interaction between large wood and debris flow processes can increase the disaster risk by creating an upstream backwater at slit-check dams, decreasing transport capacity, and increasing disaster risk. To better evaluate large wood debris flow hazards in disaster prevention and mitigation, the key influencing factors of backwater rise due to large wood accumulations at slit-check dams were investigated through a series of physical model experiments. We first summarized the characteristics of large wood accumulation and the backwater rise process, and then a characteristic wood volume was cited and extended to debris flow as the volume

generating the primary backwater rise. It was additionally observed that sediment concentration and Froude number can affect the characteristics of large wood accumulation and the process of backwater rise. The relative backwater rise increases with the rising sediment concentration and initial Froude number, and the maximum relative backwater rise is 2.15 when sediment concentration is 0.55 and initial Froude number is 2.50. Finally, a revised equation was proposed for estimating the relative backwater rise that accounts for initial condition and large wood characteristic. This study may provide a scientific basis for better understanding and evaluating debris flow disasters containing large wood and the efficient design of the structural height of the slit-check dam to a certain extent.

Keywords: Debris flow; Large wood accumulation; Backwater rise; Characteristic wood volume; Sediment concentration

ID: ICGG2022_20008

Title: Research on semi-aeronautical transient electromagnetic adaptive regularization inversion algorithm

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Abstract

The main purpose of geophysical exploration is to find out the position and occurrence state of underground target horizon or abnormal body through various exploration methods. The process of inferring the specific information of underground strata or target body from the data observed by geophysical methods is called inversion, so inversion is a core problem in geophysics and a powerful tool in geophysical data processing and interpretation. In this paper, taking the semi-aeronautical transient electromagnetic of a long wire source as an example, the data of the semi-aeronautical transient

electromagnetic is studied in 1D inversion. In this paper, the adaptive regularization inversion method is used, and the validity and reliability of the algorithm are verified by using the three-layer theoretical layered model. The results show that the algorithm has a good effect on 1D inversion, and has high accuracy and stability.

Keywords: adaptive regularization inversion; semi-aeronautical transient; Geophysics inversion method

ID: ICGG2022_20010

Title: Acquisition practice of high signal-to-noise ratio in YTB block of Sichuan Basin *

Name: Jun Wu, Jiangli Chen, Zhong Li, Zengyou Wu, Hong Liu, Yiwei Li, Yong Tang, Junguo Du Affiliation: BGP Southwest Geophysical Branch, CNPC, Chengdu, China Email: wujun wt@cnpc.com.cn

Abstract

YTB block in Sichuan basin is a favorable area to exploit oil and gas in shallow tight rock. 3D seismic project of this zone has two characteristics. Firstly, it has high requirements for the tolerance rate of the construction process and the acquisition of high signal-to-noise ratio seismic data; Second, there are widely obstacles and noises that lead to difficult acquisition construction organization. In acquisition practice, high signal-to-noise ratio seismic data was obtained by reasonable design of construction scheme, optimization of excitation parameters, improvement of receiving conditions and optimization of obstacle crossing observation system.

Keywords: Tight Oil and Gas, Tolerance Rate, High Signal-to-Noise Ratio, Obstacle

ID: SAOS2022_20000

Title: Study on diagnosis Weather Process and Flight Impact of Heavy Snowfall in Northeast China "11/2021"

Name: Xiaohui Zhang

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Abstract

The weather situation, water vapor condition, dynamic uplift condition, energy condition, ice accumulation environment and flight effect of aircraft of heavy snowfall in northeast China from November 5 to 12, 2021 are analyzed based on ERA5 reanalysis data. The results show that the heavy snowfall process in the Northeast is caused by the combination of cold vortex, trough, low level front cyclone and cold front. Through the analysis of the physical field, it is found that the sufficient water vapor transport is from the south and southeast, the convergence rise of the middle and low level divergence field, the "suction" effect of the high level divergence field, the rise of air flow in the vertical plane and the large amount of convection effective potential energy are the heavy snowfall. Water vapor flux, water vapor flux divergence, vertical velocity, potential temperature and convection effective potential energy can be used as judgement indexes for heavy snowfall prediction. **Keywords:** Heavy snow; Weather situation; Water

vapor; Energy; Flying ice

Psychology

ID: ICAG2022_20001

Title: Research on the development trend of long-term care for the elderly in China based on content analysis

Name: Mingli Zhu, Dongjing Zhang

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Abstract

Objective: The analysis of the development trend of long-term care policies for the elderly provides inspiration for the policy planning, formulation and adjustment of long-term care construction for the elderly in the future.

Method: Using the content analysis method, taking CNKI as the literature source, 153 fund literatures included in CSSCI from 2016 to 2021 were selected, and the research was conducted from four aspects: basic research, policy research, practice research and resource research. analyze.

Result/conclusion: There is an imbalance between supply and demand in the long-term care of the elderly in my country. Long-term care insurance has not formed an independent and unified insurance model, and lacks corresponding policy support, resource support, service support and social support. A long-term care security system should be established and improved, combining home, community and institutional care for the elderly, improving the long-term care insurance model, improving the quality of life of the elderly, reducing the burden on the families of the elderly, and increasing employment opportunities.

Keywords: aging; long-term care; content analysis

ID: ICAG2022 20002

Title: 17 β -estradiol inhibits H₂O₂-induced senescence in HUVEC cells through upregulating SIRT3 expression and promoting autophagy

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Abstract

17 β -estradiol (17 β -E₂) has been implicated in inhibiting the senescence of vascular endothelial cells slowing down (VEC) and the process of atherosclerosis. However, the underlying molecular mechanisms are still unknown. In this study, we examined the roles of SIRT3 in 17 β -E₂-induced autophagy and 17β-E₂-mediated inhibition of hydrogen peroxide (H₂O₂)-induced senescence in Human umbilical vein endothelial cells (HUVEC). Cellular senescence was measured by immunoblot analysis with antibodies against phosphorylated Rb and senescence-associated β -galactosidase staining. Immunoblot analysis with antibodies against LC3 and p62 was performed to determine autophagy flux. Our findings show that 17β -E₂ activates SIRT3 promoter and upregulates SIRT3 gene expression in HUVEC cells. siRNA-mediated silencing of SIRT3 gene expression inhibits 17 β -E₂-induced processing of LC3-I to LC3-II and degradation of p62, two widely used makers of autophagy. SIRT3 knockdown also blocks 17 β -E₂-induced inhibition of cellular senescence triggered by H₂O₂. Our data further reveal that SIRT3 knockdown impairs 17 ß -E2-induced co-localization of LC3 and VDAC1, a marker protein on mitochondria, when HUVEC cells were co-treated with H_2O_2 . Together, our findings suggest that 17 β -E₂ upregulates SIRT3 gene expression by activating SIRT3 promoter and then promotes autophagy, which in turn serves to remove dysfunctional mitochondria H_2O_2 caused by and consequently inhibit H₂O₂-induced senescence in HUVEC cells.

Keywords: 17 β -estradiol; Autophagy; SIRT3; Senescence

ID: PHC2022_20000

Title: Associations between urinary caffeine and

caffeine metabolites and cognitive function in older adults

Name: Xihang Fu

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Abstract

Background: The effects of caffeine on cognitive impairment have not been conclusively determined. This study aimed to objectively assess the correlation between the urinary caffeine and caffeine metabolites and cognitive decline in older adults.

Methods: Data on urinary caffeine and caffeine metabolites and the cognitive performance of participants aged 60 years and older were extracted from National Health and Nutrition Examination Surveys 2011-2014. Binary logistic regression and restricted cubic splines (RCS) analyses were used to evaluate the association between urinary caffeine and caffeine metabolites and cognitive performance.

Results: Eight hundred twenty-seven individuals were enrolled in this cross-sectional study. We observed that 1-methylxanthine (OR = 0.72, 0.82; $p_{FDR} = 0.01$, 0.02), 3-methylxanthine (OR = 0.76, 0.83; p_{FDR} = 0.04, 0.02), 7-methylxanthine (OR = 0.77, 0.78; p_{FDR} = 0.04, 0.01), 1,3-dimethylxanthine (OR = 0.78, 0.87; $p_{FDR} = 0.01, 0.03), 1,7$ -dimethylxanthine (OR = 0.76, 0.82; $p_{FDR} = 0.01$, <.01), and 3,7-dimethylxanthine $(OR = 0.80, 0.82; p_{FDR} = 0.04, 0.01)$ levels were significantly and inversely associated with cognitive decline evaluated using the AFT and DSST. The RCS results suggested an approximately linear dose response relationship between the aforementioned metabolites and cognitive performance. Moreover, the effects of urinary caffeine and caffeine metabolites on cognitive function assessed using the AFT were more evident in men.

Conclusions: Our study suggested that urinary caffeine and caffeine metabolite levels were associated with a reduced risk of cognitive impairment in a linear manner, especially in men.

Keywords: Caffeine, caffeine metabolites, cognitive

function, older adults, NHANES

ID: PHC2022_20001

Title: The mediating roles of social support and security in the relationship between negative life events and life satisfaction among left-behind children: a cross-sectional study

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Abstract

Objective: To explore how the social support and security play roles in the relationship between negative life event and life satisfaction.

Methods: A total of 1161 children including 315 left-behind Children and 846 non-left-behind children were recruited from 4 rural areas of Shandong in China. The Adolescent Self-Rating Negative Life Event Checklist, Perceived Social Support, Security Questionnaire and Life Satisfaction Scale were used for evaluating the children's status of negative life event, social support, security and life satisfaction. The Structural Equation Model (SEM) was used to evaluate the relationships among social support, security, negative life event and life satisfaction.

Result: There was no linear correlation between negative life event and life satisfaction of left-behind (r=-0.073, p > 0.05). However, the negative life event was negatively correlated with social support (r=-0.191, p < 0.01) and their security (r=-0.123, p < 0.05). And there was a positive correlation between social support and life satisfaction (r=0.631, p < 0.01). The results of structural equation model showed that social support acted as a complete mediator between negative life event and security [95%CI confidence interval, -0.189 to -0.033]. In addition, social support and security functioned as directed protective factors for life satisfaction. And negative life event acted as a indirect risk through security for life satisfaction.

Conclusion: Social support and security of the left-behind buffered the impact of negative life event

on the life satisfaction of left-behind children. Therefore, we should take some targeted intervention measures to improve the social support and security of the left-behind children, so as to improve their life satisfaction.

Keywords: Left-behind children (LBC); Negative life events; Social supports; Security; Life satisfaction; Structural equation model

ID: PHC2022_20002

Title: Work-Life Balance Issues of Women in Returning to Work due to Childbirth Using TEM Analysis

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Abstract

This study attempted to chart a series of events, including the difficulties women face in the workplace, the causes of problems, and the solutions to problems, using the perspective of work-life balance, which is the balance between work and life, when returning to work after a leave of absence due to childbirth. It is also wanted to identify differences by nationality and the following questions were asked: 1) "What problems did female employees face when returning to work? How were they able to overcome the difficulties?" and 2) "Do different nationalities have different factors that cause the problems that women face when returning to work?" A total of two research questions were built. The qualitative research method TEM was used, which allows the analysis of background factors in choosing methods and means to solve difficulties. Semi-structured interviews were conducted with eight people, four Japanese women and four Chinese women, and TEM diagrams were created for all participants. Based on those data, common TEM diagrams were able to draw for a total of 5 time periods, from the period before they all joined the company to the period after the return problem was solved. Furthermore, common return-to-work problems were found, such as

"unfamiliarity with work after returning to work", "difficulties in work-life balance", and "inability to work overtime". We also found differences in factors such as "timing of return to work" and "the role played by other members of the family", depending on participants' nationality. Finally, the limited number of participants and nationality setting in this study are research limitations, and future research will clarify the generalization of the factors found and compare them in a more multinational context. Likewise, a possible future research direction is to promote initiatives that take advantage of the "understanding of supervisors and work colleagues" and "use of childbirth experience" that made it easier for women to return to work, both of which were found in this study.

Keywords: Work-Life Balance, Difficulty in Returning to Work, TEM, Childbirth

ID: PHC2022_20003

Title: Intervention effect of audio motor brain stimulation training on cognitive impairment and negative psychology of rural elderly

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Abstract

Objective: To observe the intervention effect of audio motor brain stimulation training on cognitive dysfunction and anxiety of rural elderly.

Methods: From October 2019 to April 2020, 120 elderly patients with cognitive impairment in Xizhengzhuang, Xiliuzhuang and Dongliuzhuang, Xiaoji towns, Fengnan District, Tangshan city, Hebei Province were selected and randomly divided into 3 groups with 40 patients in each group. The control group was given finger health exercises; Experimental group 1 was given audio motor brain stimulation training (frequency conversion music) + health education on the basis of control group. Experimental group 2 was given audio motor brain stimulation training (ordinary music) + health education on the basis of control group. Memory, attention and anxiety were evaluated by behavioral me mory test, Number Crossover Task attention scale and self-rating anxiety scale before and after intervention.

Results: (1) Comparison of memory function: After intervention, the scores on immediate recall of stories and delayed recall of stories in experiment 2 were higher than those in the control group, and the scores on all dimensions and total standard scores of RBMT-II in experiment 1 were higher than those in the control group in experiment 2 (P<0.05). (2) Comparison of sustained attention: After intervention, the sustained attention index of experimental group 1 was significantly higher than that of experimental

group 2 (P < 0.05). (3) Comparison of selective attention: After the intervention, the dimensions of selective attention in the experimental group 1 were improved compared with those in the experimental group 2 (P < 0.05). (4) Comparison of anxiety: After the intervention, the self-assessment scores of anxiety in the experimental group 1 were better than those in the control group and experimental group 2, and those in the experimental group 2 were better than those in the control group, and the differences were statistically significant (P < 0.001).

Conclusion: Audio motor brain stimulation training can significantly improve memory, attention and anxiety in cognitive function of rural elderly.

Part V Instructions for Presentations

Oral Presentation

Devices Provided by the Conference Organizing Committee:

- Laptops (with MS-office & Adobe Reader)
- Projectors & Screen
- Laser pointer

Materials Provided by the Presenters:

• PowerPoint or PDF files

Duration of each Presentation:

- Regular Oral Session: 10-15 Minutes of Oral Presentation
- Keynote Speech: 40-45 Minutes of Keynote Speech

Poster Presentation

Materials Provided by the Conference Organizing Committee:

- X Racks & Base Fabric Canvases (60cm×160cm, see the figure below)
- Adhesive Tapes or Clamps

Materials Provided by the Presenters:

• Home-made Posters

Requirement for the Posters:

- Material: not limited, can be posted on the Canvases
- Size: smaller than 60cm×160cm
- Content: for demonstration of the presenter's paper



Part VI Hotel Information

About Hotel

The Grand Dynasty Culture Hotel (西安古都文化大酒店) is ideally located in the city center near several major Xi'an attractions. All 464 guestrooms in this Xi'an hotel feature modern amenities including large screen TVs, mini-bars and 24-hour room service. The hotel's restaurant serves a variety of Asian and Western delicacies, and a bar/lounge caters for after dinner drinks. Conference rooms at the business center are equipped with audiovisual facilities as well as all necessary amenities for an efficient office environment away from home. In terms of recreation, the hotel offers a fully-equipped gymnasium and a tennis court for active guests, along with an indoor swimming pool, steam room and sauna for guests seeking something a little more relaxed.

Address: No.172 Lianhu Road, Lianhu District, Xi'an, China

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Post code: 710002

Tel: +86-029-87216868

How to Get to the Hotel

Xi'an Xianyang International Airport: 34.15km 咸阳国际机场: 全程约34.15公里, 打车费约95元 Xi'an Railway Station: 3.75km 西安火车站: 全程约3.75公里, 打车费约11元 Line 1 Metro Station Sajinqiao: 0.24km

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driver if you take a taxi:

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