

**Special Session**  
**on**  
**The Interaction Effect among Surface Water, Groundwater**  
**and Seawater and Its Socio-Economic Impacts**  
**at**  
**The 8<sup>th</sup> International Conference on Water Resources and**  
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**Scope and Objectives:**

With the accelerating urbanization and rapid development of economy, water shortage and water environment crisis have become critical constraints to the sustainable development of China's economy, society, environment and ecology. The coastal areas provide habitat for more than 45% of China's urban population, and contribute more than half of the national GDP. However, the coastal areas suffer the most from water shortage and water environment crisis. Numerous activities such as urban expansion, groundwater overutilization, and pollution in upstream rivers have caused serious environmental issues including urban land subsidence and hardening, groundwater pollution, water quality deterioration in estuary, ecological environment damage, seawater intrusion, coastal erosion, soil salinization, which seriously affect the sustainable development of the coastal areas. The estuary delta is an area where surface water, groundwater and seawater interact. Revealing the interaction mechanism of surface water, groundwater and seawater provides significant practical and theoretical insights for solving water conflict, securing water safety, protecting ecological environment and promoting the sustainable development of the social economy in coastal areas.

**Main topics:**

1. Lowering and pollution of groundwater and their impacts on society, economy, ecology and environment.
2. Urban expansion, land subsidence, coastal erosion, seawater intrusion and loss of seawater floodplain and their socio-economic, ecological and environmental impacts;
3. The occurrence mechanism, spatial and temporal distribution characteristics, loss assessment and evolution trend of marine disasters, such as coastal erosion, seawater intrusion, loss of seawater floodplain, sea level rise and typhoon storm surge.
4. Spatial and temporal distribution features and risk assessment of the surface water reduction, cutoff, flooding, pollution and water quality and their socio-economic impacts and countermeasures.

5. The interaction mechanism among seawater, groundwater and surface water to induce seawater intrusion and loss of floodplain. Their impacts on agriculture, industry, service industry, green and sustainable development, energy conservation and blue carbon.
6. The comprehensive management, regulation, exploitation, utilization of water resource (surface water, groundwater and seawater), protection of water environment and evaluation of water security.
7. Submarine groundwater discharge.

## 主题：河水、海水、地下水交互效应及其对社会经济的影响

随着城市化进程加快和经济社会的发展，水资源短缺和水环境危机已成为制约我国经济、社会、环境、生态可持续性发展的重要制约因素。沿海地区分布着我国 45%以上的大中城市和城市人口，贡献了 50%以上的 GDP。然而，沿海地区也是我国水资源冲突与水环境危机最重要的地区，城市规模扩张、地下水源开采、河流上游污染、海水倒灌和漫滩等一系列问题，引发了城市地面沉降和硬化、地下水源污染、河口水质变异、生态环境破坏、海水侵蚀、土壤盐渍化等诸多问题，因此也严重影响着沿海地区的社会经济可持续发展。河口三角洲地带是河水、海水和地下水以及滨海湿地的重要区域，如何揭示河水、海水、地下水的交互效应，探明三者之间的交互作用机理，对于解决水资源冲突、水环境安全，保护沿海地区生态环境和社会经济可持续发展，具有重要的现实意义和理论意义。

### 主要议题：

1. 地下水减少、短缺，地下水污染问题及其对社会经济、生态、环境的影响；
2. 城市规模扩张、地下水开采、地面沉降与河口水位下降、海水侵蚀、海水倒灌、海水漫滩问题及其对社会经济、生态、环境的影响；
3. 海水倒灌、地下水海底排泄、海水入侵、海水漫滩、海平面上升、台风风暴潮等海洋灾害的发生机理、时空分布特征、灾害损失评估、灾害演化趋势；
4. 河水减流、河水断流、河水泛滥、河水污染、河口水质变化、洪涝灾害等时空分布特征、风险评估及其对生态环境、社会经济发展的影响及应对；
5. 海水入侵、海水倒灌、海水漫滩等与地下水、河水之间的相互作用机理、交互效应、典型特征，及其对农业、工业、服务业，以及绿色发展、可持续发展、节能减排、蓝碳等的影响；
6. 河水、海水、地下水等水资源、水环境与水安全的综合管理、调控、开发、利用、保护、评估、政策。
7. 地下水海底排泄的解析解。