

A Leaky Himalaya? Streamflow Composition and Dynamics Affected by Rifts and Faults in the Yarlung Zangbo River in Northern Himalayas



Dr. FAN Linfeng
(范林峰博士)

Southern University of Science and Technology

26 August 2022



11:30 a.m.



Zoom Link: [Here](#)



Meeting ID: 992 4969 9833

Passcode: 983837

The Yarlung Zangbo River (YZR) is the largest river in northern Himalayas, providing critical water resources for downstream. It is vital to quantify contributions of different water sources (e.g., precipitation, snowmelt, groundwater) to the YZR's streamflow, yet an important omission in previous studies is the control of active structures (e.g., rifts, faults) on streamflow patterns. In this seminar, I will introduce a comprehensive hydrological modeling framework and present results from our recent studies on the relative contribution of precipitation, melt runoff and groundwater to streamflow in the YZR. Importantly, our results suggest that over one third of the annual meteoric water in the YZR basin leaks through rifts and faults most likely into deep fractured bedrock aquifers, which constitutes mountain block recharge to downstream aquifers in the Indo-Gangetic plain and submarine groundwater discharge into the Bay of Bengal. This leakage-discharge mechanism and magnitude provide a new perspective on the tectonic control on Himalayan hydrology and highlight the joint role of groundwater and surface rivers in transmitting fresh water to downstream thus helping shape a complete picture on the functionality of the Himalayan water tower.



Enquires: 3943 9624 essc@cuhk.edu.hk