IAHR Tsinghua University Young Professionals Network

Our vision and mission

The IAHR Tsinghua University YPN was established in 2015 and is an organization of students and young professors from Tsinghua University working in fields related to hydro-environmental sciences. Our goal is to provide a platform for members to communicate with other researchers worldwide and help our members get access to more academic resources.

Main goals and key objectives

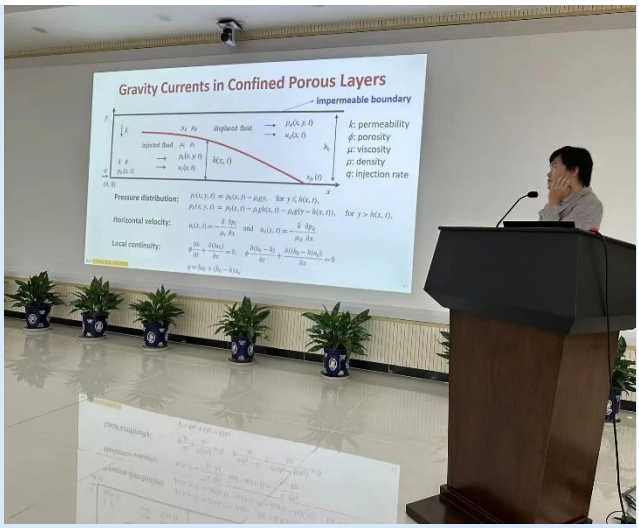
The main goal of the Tsinghua YPN is to provide a variety of online and offline communication opportunities to excellent scholars for our members, and carry out some offline activities under an appropriate condition.

Activities during this year

Category 1: academic lectures and salons

- **Name: Atmospheric rivers and natural hazards under climate change**
- **Date: 2024.10.18**
- **Venue: Beijing, China. Accessible online.**
- **Objectives: *Advances in hydroscience***
- **Description: Atmospheric Rivers (ARs) are filamentary regions conveying water vapor and their volumetric flow can be many times that of the Amazon River. This presentation will provide an overview of the links between the atmospheric rivers and the hydrological cycle worldwide. Using a New Zealand case study, the presentation will discuss a framework for linking atmospheric rivers to natural hazards.The presentation will discuss the occurrence of atmospheric rivers in different parts of the world and their impacts on natural hazards. The presentation will also discuss the impact of climate change on atmospheric rivers.**

- **Name: Some aspects on energy and environmental fluid mechanics: Gravity current, unsaturated flow, and hydraulic fracturing**
- **Date: 2024.09.28**
- **Venue: Beijing, China**
- **Objectives: *Advances in hydroscience***
- **Description: In the first half of this talk, we introduce recent efforts towards a unified theory of gravity current, interfacial and unsaturated flows in a porous layer: The influence of viscosity ratio is first clarified, which leads to three solution branches (shock, rarefaction, traveling wave) at intermediate times for the self-similar evolution of the fluid-fluid interfaces. The influence of wetting and capillary forces is then clarified under the assumption of vertical gravitational-capillary equilibrium.**



The wetting and non-wetting fluids now distribute gradually cross the sharp fluid-fluid interfaces, leading to two more basic flow patterns (capillary film, compound wave) for the profile shape evolution. In the second half of this talk, we introduce recent efforts on hydraulic fracturing of elastic solids: We first introduce the surprising appearance of cusp-shaped hydraulic fractures in a Hele-Shaw cell, whose development does not exhibit pressure singularity at the fracture's tip, which is fundamentally different from our previous understandings of hydraulic fracturing of elastic solids. We then discuss an ongoing exploration on the fixed-radius, dipole-flow and tip-receding regimes of fracture deflation, when the fracturing fluid flows back from a narrow conduit at the centre.

- **Name: The Yellow River and management of modern China**
- **Date: 2024.10.31**
- **Venue: Beijing, China**
- **Objectives: Raising awareness about water issues**
- **Description: Professor Hou Xiaojia's review of the thoughts of important figures and the historical changes of the Yellow River leads to her thoughts on the management of the Yellow River in modern China. Afterwards, taking "Pingyuan Province," "Weishan Lake," and "Sanmenxia Dam" as specific examples, she shared her understanding, viewpoints, and thoughts on the management of the Yellow River from the perspective of a historian.**

- **Name: Technical Writing in English**
- **Date: 2024.05.20**
- **Venue: Beijing, China**
- **Objectives: Sharing experiences of English writing**
- **Description: The seminar provides an overview of technical writing in English. It will address common issues of the English language in technical writing. Examples of writing will be given to point out some common issues/mistakes. This discussion will cover the journal impact factor (JIF) and a typical structure of a journal paper and how to present the results in a story. A brief discussion on the use of artificial intelligence (AI), such as ChatGPT, to write technical paper will be given in the seminar.**

Category 2: peer sharing of academic experience and professional development

- **Name: Sharing of academic experience and skills**
- **Date: 2024.15.25**
- **Venue: Beijing, China**
- **Objectives: Delivering opportunities for learning skills**
- **Description: The student Han shared his research studies and his experience and suggestions on how to do research.**

- **Name: Sharing of experience about professional development**
- **Date: 2024.05.19**
- **Venue: Beijing, China. Accessible online.**
- **Objectives: Delivering opportunities for professional development**
- **Description: Three graduated students shared their experience and suggestions on professional development.**

Category 3: academic conferences

- **Name: The 3rd doctoral student forum of IAHR-YPN in China**
- **Date: 2024.04.13-2024.04.14**
- **Venue: Beijing, China.**
- **Objectives: providing opportunities for young researchers to communicate with each other**
- **Description: We hold this conference to provide opportunities for young researchers to communicate with each other and learn the advances in hydroscience. The conference was divided into six sub-forums, in specific, they were about the hydraulics, oceanic science, hydrology, climate change, etc.**

Partnerships and collaboration

Partnerships

Collaboration with other YPNs, associations or organizations
In April 13th, 2024, we communicate with other YPNs in China to explore approaches on how to provide better services for our members.

Communication channels

Twitter |
Instagram |
Linked In |
Facebook |
WeChat |
Website |https://www.iahr.org/index/committe/48