上海交通大学 SHANGHAI JIAO TONG UNIVERSITY

船舶海洋与建筑工程学院 School of Naval Architecture, Ocean & Civil Engineering

英国 Heriot-Watt University-Edinburgh Qingping Zou 教授学术报告

报告题目： Asymmetric wind, wave and current interaction: implications for coastal hazard and marine renewable energy

时　　间： **2019 年 12 月 10 日（星期二），上午 10:00**

地　　点： 上海交大闵行校区木兰船建大楼 **B801** 会议室

报 告 人： Prof. Qingping Zou, Heriot-Watt University-Edinburgh, UK

报告人介绍：

Prof. Qingping Zou joined the Lyell Centre and Institute for Infrastructure & Environment at Heriot-Watt University-Edinburgh as a Chair Professor in December 2017. She received a BSc in Physics from Nanjing University and a PhD in Physical Oceanography from Scripps Institution of Oceanography, University of California-San Diego. After that, she worked at Johns Hopkins University, MIT-Woods Hole Oceanographic Institution, Dalhousie University and Bedford Institute of Oceanography. She has been a Reader at University of Plymouth in UK and tenure track Assistant Professor at the University of Maine in USA. Her research interests cover a broad spectrum of topics in the area of coastal and ocean process, coastal and ocean engineering, marine renewable energy and oceanography, such as ocean waves, marine renewable energy, coastal hazards, resilience and adaptation to the changing climate, fluid-structure interactions, sediment transport and scour, flow-vegetation interactions, marine pollution, wave-tide-surge-ocean circulation interactions, coastal ecology and aquaculture, remote sensing and air-sea interaction.

报告内容简介：

Better understanding of wind, wave and current interaction is of theoretical and practical significance for a wide variety of problems in the coastal zone and deep ocean. A two-phase flow Navier-Stokes solver (OPENFOAM) is combined with a Volume of Fluid (VOF) surface capturing scheme to investigate (1) wave breaking and blocking by spatially varying opposing currents, (2) wind and current effects on extreme wave formation and breaking, and (3) effects of vertical current shear on nonlinear wave interactions. In this talk, we will take a close look at the asymmetric behavior of wind, wave and current interaction with special attention to the influence of opposing wind and current, which is not well understood. The effects of wind, wave and current interaction on coastal hazard, sediment transport and marine renewable energy are illustrated through case studies of coastal flooding and erosion and marine renewable energy in Southwest England and Northeast USA, using structured and unstructured coupled wind, wave and ocean circulation models, WRF, ROMS-SWAN and ADCIRC-UNSWAN, and a sediment transport model. It was also found that a coupled multi-system ensemble modelling framework is robust in assessing coastal and ocean risk and uncertainty cascade from atmosphere to ocean to coast.

欢迎大家参加！

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