海岸和近海工程国家重点实验室
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题　目： **Nonlinear wave transformation over steep breakwaters**

报告人： **Dr. Saulo Da Silva Mendes**

时　间： **2023年09月15日 15:30-16:30**

地　点： **腾讯会议房间号：775 8184 2394**

内容简介：

Introduction: Saulo Mendes is a senior research fellow at the department of applied physics of the University of Geneva. He is Brazilian, completed bachelor and masters of science in theoretical physics in Brazil and have obtained a Ph.D. in physical oceanography at the University of North Carolina at Chapel Hill in the United States. His work mainly concerns the analytical treatment of rogue wave formation, evolution and forecast due to a variety of out-of-equilibrium conditions and its applications to fundamental and applied hydrodynamics.

Abstract: Wave shoaling of water waves over mild bottom slopes is well described by linearized theories. However, the analytical treatment of the shoaling effect on nonlinear waves subject to rapidly varying bottoms has proven to be elusive in the past decades. As the spatial evolution of the exceedance probability of irregular waves is affected by second-order effects in steepness, the nonlinear shoaling coefficient throughout a symmetrical and steep breakwater is investigated by a stochastic framework. By inverting the effect of slope on normalized wave height distribution, it is possible to obtain a closed-form slope dependence of the nonlinear shoaling coefficient. The resulting stochastic model is compared with the broadest set of experiments available, finding good agreement.

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