SEMINAR SERIES

北京大学工学院 航空航天工程系

湍流与复杂系统国家重点实验室

Wiener-Hopf Talk I: Wiener-Hopf Method in Discrete Scattering Problems

报告人：**Elena Medvedeva**

单　位：**The University of Manchester**

时　间：11 月 6 日 周三 上午 10:00

地　点：新奥工学大楼 3048 会议室

主持人：吕本帅 研究员

报告内容摘要：

The Wiener-Hopf method is a powerful tool from complex analysis used to solve partial differential equations across various fields, including acoustics, hydrodynamics, elasticity, and many more. In this talk, I will begin with a general formulation of a scattering problem and outline a solution scheme that employs the Wiener-Hopf method. I will then discuss the motivation for studying discrete scattering problems and illustrate applications through specific examples from my research: diffraction by a set of collinear cracks in a square lattice and diffraction by a transverse screen in a discrete waveguide, both of which utilise the Wiener-Hopf technique. I will provide an overview of the solutions, present some results and analysis, and discuss the similarities and differences between these discrete problems and their continuous counterparts.

报告人简介:

Elena Medvedeva holds a BSc and MSc in Physical Acoustics from the Physics Faculty at Lomonosov Moscow State University. Her research experience includes a two-year internship in experimental hydroacoustics at the Shirshov Oceanology Institute and an industrial project with Huawei, where she focused on measuring and modelling the acoustic characteristics of earphones. Currently, She is a final-year PhD student in the Mathematics of Waves and Materials research group at the University of Manchester, within the Department of Mathematics, where she is conducting research on wave scattering, particularly in discrete media. Her primary research interests revolve around mathematical diffraction theory and its applications.

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