

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

报告题目: Flamelet Generated Manifold Methods for Large Eddy Simulation: Modifications, Extensions and Future Outlook

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报告内容摘要:

The use of flamelet generated manifold and tabulated chemistry for high-fidelity simulations of complex geometries and industrial burners has grown over the last 20 years. The capability of transporting a reduced set of scalar variables to represent partially premixed combustion and obtaining the reaction source terms outside of the large eddy simulation (LES) makes them attractive to industry. This seminar will present some of the modifications to conventional flamelet generated manifold approaches. The first part will address the influence of modelling the progress variable variance and the influence of closure models on the characteristics of turbulent premixed flames. The second part will focus on extensions to the typical manifold, which include modelling of carbon monoxide in methane-air lab scale burners and the influence of heat loss on the stabilisation of hydrogen-air flames. Finally, the future direction of flamelet generated manifold approaches will be discussed.

报告人简介:

Dr James Massey is currently an MHI-Robinson senior research fellow at the Department of Engineering, University of Cambridge. His current research is on computational modelling of high-pressure, and 100% hydrogen and blended combustion. He completed his PhD in 2019 at the same department studying the influence of heat loss on flame stabilisation and premixed flames stabilised by a bluff body. He has also completed a postdoc project funded by Mitsubishi Heavy Industries on carbon monoxide modelling. He is a committee member of the Institute of Physics Combustion Physics Group and a member of the Combustion Institute British Section. He has published around 30 journal and conference papers.



时间: 2024年5月15日(周三) 中午 12:20 – 14:00

地点: 北京大学 工学院 力学楼 434 会议室

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