

2025

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12:10

12:50

12:10-12:15

◆ Introduction

12:15-12:40

◆ Seminar  
(Presentation)

12:40-12:50

◆ Q&amp;A

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# Shock Wave: the symbol of supersonic fluid dynamics and its applications in different fields

**Key Words**

High-speed fluid dynamics

Shock wave

Drug delivery

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Daisuke ICHIHARA is an Associate Professor of the Department of Mechanical and Control Engineering at Kyushu Institute of Technology. He received an M.S. degree from the Department of Aerospace Engineering of Nagoya University in 2013. After graduating, he joined NEC Corporation as a patent engineer. In 2014, he re-entered the doctoral course at Nagoya University and received a Ph.D. in 2017. In 2024, he moved to the current organization and started the "High-Speed Fluid Kinetics Laboratory" as a P.I..

When fireworks bloom in the summer night sky, you may feel a jolt after seeing the beautiful light. This is caused by "shock waves", a pressure wave that propagates through the air. Shock waves are a dynamic and beautiful phenomenon in nature. The most critical point is its non-linearity. The instantaneous pressure jump behind the wave has been an unavoidable "air barrier" for aeronautical engineers. In this presentation, I will introduce shock waves' profundity and unexpected applications.