

# 講演会の開催について

講演期日 令和6年3月11日(月) 13:00~14:00

講演会場 日本大学理工学部 駿河台タワー・スコラ6階S604教室

<https://www.cst.nihon-u.ac.jp/campus/surugadai/>

主催 日本大学理工学部機械工学科木村・秋元研究室

後援 駿博会

参加費 無料

講演題目 Flow-Excited Acoustic Resonance in Industrial Applications

流れにより励起される音響共鳴の産業用途

講演者

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## Abstract

Free shear flows, such as wakes behind bluff bodies, free shear layers over cavities and side branches, and jet flows through orifices and valves, are highly unstable. The instabilities of the free shear flows generate periodic vorticity shedding with frequencies that vary linearly with the flow velocity. In turbulent flow, which is typical in many industrial applications, the vorticity shedding is weak and highly unorganized/incoherent. However, when the vorticity shedding couples with an acoustic mode a feedback mechanism occurs and the vorticity shedding becomes stronger and much more coherent. This often leads to the generation of excessive vibrations and/or acute noise problems. The feedback cycle of oscillation where flow instabilities trigger acoustic resonance excitation is illustrated schematically in Figure 1. In this presentation, different examples of flow-excited acoustic resonance will be presented with discussion of some control strategies that can be used to suppress acoustic resonance excitation in industrial applications.



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