令和 7 年度第 1 回応用物理学会北海道支部講演会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようご案内申し上げます。

【 演題 】Origami Mechanics and Topological Waveguides : A New Frontier in Metamaterials
【 講師 】Jinkyu Yang, Department of Mechanical Engineering, Seoul National University, Professor
【 日時 】2025 年 2 月 17 日(月)16:30～17:30
【 講演開催場所 】北海道大学工学部応用物理学部門会議室(A3-62 室)
【 主催 】応用物理学会北海道支部
【 講演の要旨 】Mechanical metamaterials are emerging as an enabling technology for manipulating mechanical energy flow at will. The unique mechanical properties of these metamaterials are derived from structural architectures rather than their base materials. A natural question is how we design these architectures in a clever way to realize novel mechanical properties unprecedented in nature. In this presentation, I will talk about two powerful tools for designing mechanical metamaterials: origami and topology. First, I will show how the origami design principle can be exploited to construct metamaterials that mitigate structural impact in an efficient way. Specifically, I will demonstrate a counter-intuitive mechanism of converting external compressive impact to tensile waves by using origami-based metamaterials. Second, I will talk about how the mathematical concept of topology can be applied to the design of mechanical waveguides. Inspired by the recent advent of topological insulators, I will show how these topological waveguides can generate a defect-immune robust propagation of stress waves. Throughout the talk, I will place the computational and experimental results in the context of potential engineering applications.

【 世話人 】松田 理
北海道大学大学院工学研究院応用物理学部門
Tel: 011-706-7190, E-mail: omatsuda@eng.hokudai.ac.jp