青山学院大学 物理科学科 コロキウム

2025年度 第1回

下記の通りコロキウムを企画致しました。学生や分野の違う方にもわかるレベルから始めて下さるようにお願いしてあります。どなた様もご自由に是非ご聴講ください（事前参加登録なし）。

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「主催：物理科学科、基礎科学コース、機能物質創成コース」

講演者 Marcelo Dias（Edinburgh University)

日　時 6月26日（木）16:45 から

場　所 青山学院大学　理工学部　L棟6階　L 603室

講演題目 Cracking Down on Fracture to Functionalise Damage

概要：In this talk, we will discuss damage in architected materials and explore some challenges in designing mechanisms of failure. We will focus on structures on the verge of mechanical instability, also known as isostatic or Maxwell lattices, where stress concentrations are dominated by robust topology and geometry-dependent parameters. The mechanisms of failure in Maxwell lattices arise from the localization of surface soft modes (also known as floppy modes) and states of self-stress, which can be controlled through robust topological mechanical polarization related to the unit-cell geometry. By combining topologically distinct lattices, we will demonstrate how to manipulate the damage path and fracture toughness.

略歴：Dr. Dias obtained his bachelor's in physics at the State University of Sao Paulo, Brazil. Four years later, he commenced a MSc in theoretical physics from his alma mater. In 2012, he obtained his PhD degree from the University of Massachusetts, USA, where he researched on the mechanics of origami structures and growth mechanisms. Dr Dias has worked as a researcher on a broad range of topics in structural engineering and applied mathematics at Brown University School of Engineering (USA), Aalto University (Finland), and the Nordic Institute for Theoretical Physics at KTH (Sweden). Before joining the University of Edinburgh, Dr. Dias was an Associate Professor of mechanical engineering at Aarhus University in Denmark, where he lead his research group "Mechanical Metamaterials and Soft Matter".
