



**Sai Ravela**

## **Resolving Risk in a Nonstationary World**

**Large Ensembles, Extremes, and Sustainability**

Understanding and managing risk in today's world requires more than averages—it demands careful attention to the extremes. Dr. Sai Ravela (MIT) develops methods to resolve such risks by producing detailed, large-ensemble process representations that link hazards to decisions in what he calls the “sustainability stack”: from hazard, vulnerability, and exposure to impact, risk, and ultimately policy action. This talk will highlight how simplifications in modeling (“just a little physics”) shape our ability to capture risk, how downscaling alters return periods and confidence levels, and why the past is only weakly predictive of the future.