

# Learning Multiscale Energies from Data by Inverse Renormalisation

## Salam Distinguished Lecture Series 2024: Stéphane Mallat

1 and 2 February 2024  
Budinich Lecture Hall  
ICTP

[link to zoom webinar](#)

1 Feb, 14:00

### Lecture 1

Energy estimation and data generation by inverse renormalisation group

2 Feb, 11:00

### Lecture 2

Log-Sobolev stability, wavelets and interaction energies across scales

2 Feb, 14:00

### Lecture 3

Multiscale neural network models for generation by score diffusion

### Biosketch:

*Stéphane Mallat is Professor at the Collège de France, a member of the French Academy of Sciences, and a foreign member of the US National Academy of Engineering. He was a founder and CEO of a semiconductor start-up company. He developed the multiresolution wavelet theory and algorithms at the origin of the compression standard JPEG-2000, and sparse signal representations in dictionaries with matching pursuits. His current work is devoted to mathematical models of deep neural networks, for data analysis and physics.*



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