# Learning Multiscale Energies from Data by Inverse Renormalisation

### Salam Distinguished Lecture Series 2024:

1 Feb, 14:00

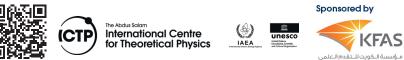
2 Feb, 11:00

2 Feb, 14:00

## **Stéphane Mallat**

#### 1 and 2 February 2024 **Budinich Lecture Hall** ICTP

link to zoom webinar





#### Lecture 1

Energy estimation and data generation by inverse renormalisation group



#### Lecture 2

Log-Sobolev stability, wavelets and interaction energies across scales

#### 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.

