



## **LMS Seminar**

25 January 2024 at 2:00 pm - Room Jean Mandel

### **Anisotropic elasticity threshold function: the benefit of group theory**

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#### **ABSTRACT**

The exit from the elastic domain of a lattice-type architected material is controlled by the behaviour of the beams that make it up, which can plasticize in tension and buckle in compression. Furthermore, in the case of a periodic material, the symmetries of the elementary cell will imply a strong anisotropy of the limit surface.

In a modelling approach, it is important to describe the limit surface obtained numerically or experimentally in order to deduce the main characteristics to be reproduced by a threshold function.

To deal with the modelling of anisotropic surfaces, the appropriate methodological tool is group theory. We will look here, in the simplified case of 2D modelling, at how to use this tool to identify, on a specific example, a suitable polynomial criterion for elasticity yield.