The Cobra Wave
By
Prof Frédéric Chevy
École Normale Supérieure, Paris, France

Date: 20 April 2018, Friday
Time: 4pm – 5pm
Venue: Hilbert Space (SPMS-PAP-02-02)
Host: Assoc Prof David Wilkowski

Abstract

The cobra wave is a popular physical phenomenon illustrated online by many spectacular videos. It arises from the explosion of a metastable grillage made of popsicle sticks and for a physicist, this system provides a non-trivial example of structural dynamics that is nevertheless amenable to an in-depth understanding. Using a joint experimental and theoretical analysis, we have studied the interplay between the dynamics of single sticks and that of the whole structure and we have shown that the cobra wave could only exist in a narrow range of parameters constrained by gravity and material fracture.

Short Biography

Frédéric Chevy is professor at the École Normale Supérieure in Paris. He studies the dynamics of quantum as well as classical fluids, and his latest research involves the study of strongly interacting Bose gases and of mixtures of bosonic and fermionic superfluids.