

# Elastic Wave Turbulence : from the plate to the membrane

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### Context

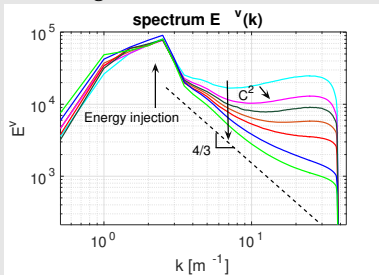
- Weak Turbulence Theory : non linear interactions between dispersive waves.
- Weakly non-linear and weakly dispersive systems can generate localized coherent structures ( choc waves, solitons ).
- Elastic waves in a pre-stressed plate  $\omega^2 = C^2 k^4 + \frac{T k^2}{\rho h}$  tending to the limit  $h=0$  (membrane) by increasing tension  $T$  or reducing dispersion  $C^2$ .

### Experiment

### Numerical Simulation

Tending to the limit  $h = 0$ , are there still waves ?

- Reducing  $C^2$



- $C^2 = 0$  Purely non-dispersive waves

