## Networks of acoustic waveguides: effects of symmetry and topology

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In this work, we explore the wave properties of networks of slender acoustic waveguides exhibiting different symmetries (mirror, chiral or hidden). First, using the slenderness assumption of the connecting waveguides and not relying on a tight binding approximation, it will be shown how these networks can be directly mapped into typical discrete lattice systems with an Hamiltonian matrix depending only on geometrical parameters, and with a pseudo-energy linked to the frequency. Then, in these systems, it will be explored how eigenfrequencies [1-4] or scattering properties [5] follow interesting broadband and/or robustness properties inherited from the symmetries and associated topological aspects. Both the theory and the experimental realization, e.g. in acoustical context, will be discussed.

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