

## **Hearing semitoric systems**

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Semitoric systems are four-dimensional integrable systems with a particular  $S^1$ -symmetry which are very natural in physics and as a mathematical generalization of toric systems.

I will explain a joint work with San Vũ Ngọc (Université Rennes 1) in which we proved that these systems are spectrally determined: from the joint spectrum of a quantum semitoric system, one can recover the underlying classical semitoric system (up to isomorphism). In fact, we have more: all symplectic invariants of the system can be explicitly computed from its spectrum. All the above notions will be reviewed, in particular no knowledge of quantum mechanics or spectral theory is required.