PMQ31 "Interactions, topology and symmetry in disordered systems"

**Thématiques : condensed matter physics, cold atoms, optics**

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Experimental and theoretical advances in atomic physics and optics have been made for nearly two decades to get a better understanding of disordered systems and their manifestations, originated from condensed matter physics, as the celebrated Anderson localization. Furthermore, a significative scientific effort has been recently realized to describe puzzling phenomena in the presence of disorder with another key ingredient: interactions (Many-Body Localization with cold atoms) [1], collective effects with light [2], topology [3], symmetry breaking [4] (with artificial gauge fields).

These topics are now intensively studied in different communities (condensed matter, cold atoms, optics) at a French national scale in a very competitive international context. The general aim of this mini-colloquium is to bring together researchers from different fields of physics which study those various disordered systems, to explore perspectives proposed by the interplay between disorder and interactions/topology/symmetry.

This will offer the opportunity to discuss recent results, share the knowledge in this subject and possibly initiate new collaborations. Experimental, theoretical and numerical contributions from atomic physics, optics and condensed matter physics are welcome in this mini-colloquium.

**Références :**