

## **Topology and scale invariance in atomic Flatland**

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In a 2D world, most transitions towards ordered states of matter like crystals or magnets would not occur because of the increased role of fluctuations. However, non-conventional topological transitions can still occur, as understood by Kosterlitz and Thouless (2016 Nobel prize). In this talk, I will present some important features of Flatland physics explored with cold atomic gases, and connect them with other prominent topological properties of matter, such as quantum-Hall type phenomena.