SECTION DE PHYSIQUE

# COLLOQUE DE PHYSIQUE

24, QUAI ERNEST-ANSERMET, CH-1211 GENÈVE 4

**Lundi 17 février 2020, 12h30**

Ecole de Physique, Auditoire Stueckelberg

**«**Topological phase transition and scale invariance in atomic Flatland**»**

**Prof. Jean Dalibard**

Collège de France and Laboratoire Kastler Brossel, France

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 (Physics Nobel prize 2016). In this talk I will present some important features of Flatland physics explored with cold atomic gases, such as the transition to a superfluid phase and the emergence of quasi long-range order. I will also explain why these 2D fluids exhibit a scale/conformal invariance, and discuss a related feature : When the fluid is placed in a harmonic potential, there exist specific shapes -"breathers"- that oscillate without any damping although they are far from.

Une collation en compagnie du conférencier sera offerte après le colloque.

Prof. Dmitry Abanin

Genève, le 7 février 2020/nc

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