Scale invariance, a hidden symmetry explored with quantum gases

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Scale invariance, a concept first introduced in high energy physics, has recently found many applications in the physics of quantum gases and fluids. It applies to strongly interacting Fermi gases, to two-dimensional Bose gases, and to few-body systems exhibiting the so-called Efimov effect. In this presentation, I will illustrate the emergence of scale and conformal invariance in cold atomic gases with examples ranging from thermodynamics to soliton physics to "breathers", i.e. specific structures with periodic time evolution.