

Correlated topological matter : news and views from quantum simulation

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Considerable efforts are currently focused on realizing correlated topological phases in quantum-engineered systems, with the aim of manipulating their exotic properties within a highly controlled environment. Important advances in this field recently led to the observation of fractional quantum Hall states, using small ensembles of atoms or photons. This talk will present key aspects of these emerging experimental settings, and discuss new ways to probe and characterize quantum Hall states in ultracold atomic gases. Prospects of realizing Majorana zero modes and chiral spin liquids in quantum simulators will also be discussed.