Abstract

Quantum matter out of equilibrium emerge as an important platform to induce correlations and transient orders. Broad basic questions about orders that are inherently dynamic have been addressed in the context of driven cold atoms, spins, magnetic states and superconductors. I will discuss the example of emergent dynamic and entangled states in quantum paraelectrics where driven electric fluctuations induce magnetization, the "dynamic multiferroicity" phenomenon [1]. We see a rapidly growing list of unusual quantum states in time domain to be discovered. I will point to other examples of "dynamic orders" out of equilibrium, e.g. Berezinski pairing and coherent states of magnons in Dirac materials [2].


Short Biography

Alexander Balatsky research interests are in quantum materials and materials informatics. He is a professor of theoretical physics at UCONN and Nordita. Prior to joining academia he was at Los Alamos where he was a Los Alamos fellow and served as the founding director of the Institute for Materials Science (MS). A. Balatsky was elected a Fellow of the American Physical Society, Fellow of the American Association for the Advancement of Science.

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