Stuttgarter Physikalisches Kolloquium

Fachbereich Physik, Universität Stuttgart
Max-Planck-Institut für Festkörperforschung
Max-Planck-Institut für Intelligente Systeme

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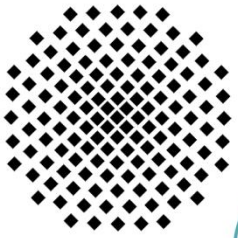

Dienstag, 8. Dezember 2020	16:15 Uhr	Online-Vortrag

Universität Stuttgart, Pfaffenwaldring 57, 70569 Stuttgart-Vaihingen

Gastgeber: Prof. Dr. Tilman Pfau, Universität Stuttgart, Telefon: 0711 - 685-68025

When Photons Self-Organized: Mott Insulators and Laughlin States of Light

Jonathan Simon
James Frank Institute & Pritzker School of Molecular Engineering, University of Chicago

Abstract

In this talk, I will describe the first materials composed of self-organized, strongly-interacting photons. These are (1) a Laughlin molecule of optical photons, and (2) a Mott insulator of microwave photons. The challenge of using light to make and probe these materials will teach us what each of these quantum few-body states is, and because we must engineer the photons to realize each necessary ingredient from the ground up, the materials will be distilled to their bare essentials. I will conclude with prospects to push these ideas even further, from synthetic wormholes for light to optical/mm-wave inter-converters.