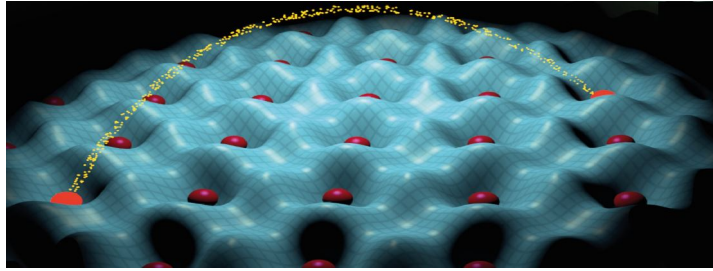


# Challenges and perspectives in resonator-mediated quantum many-body physics: From atoms to solid state



Contribution ID: 18

Type: not specified

## Discussion 2: Multimode cavities; non-classical states of light; coupled light matter many body systems

*Tuesday, 18 June 2024 16:20 (1 hour)*

Prospects, limits, challenges of multimode cavities:

Are they more than an “inhomogeneous continuum”

Are the couplings quasi-random, can they be shaped in interesting ways?

How to numerically (and efficiently) simulate light-matter systems (gauge choice, truncation problems) ?

What kind of non-classical light states can be created from cavity-coupled systems?

Effects on matter by driving with squeezed / non-classical light?

Use of light-matter states as strong THz sources?

Use of optical combs? Of acoustic resonators?

**Presenter:** AEPPLI, Gabriel (ETH Zurich / PSI / EPFL)