Quantum Optics Inspired Magnonics

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Quantum optical developments have seeded a number of developments in several fields, especially the condensed matter physics. For example, the cavity-produced strong coupling has led to similar studies with other systems like quantum dots, superconducting qubits, excitons, plasmons. In this talk, I would present applications of a number of ideas from quantum optics to the field of magnonics. These include use of quantum state transfer to prepare squeezed and entangled states of magnons; dispersive and dissipative magnon-magnon interactions; enhanced magnon response via the parametric interactions and many others.