Janne Ruostekoski\textsuperscript{1}, Gaetan Facchinetti\textsuperscript{1,2}, and Stewart Jenkins\textsuperscript{1}

\textsuperscript{1}University of Southampton, University Road, Southampton, United Kingdom
\textsuperscript{2}Ecole Normale Superieure de Cachan, Cachan, France

We demonstrate how cold dense atomic ensembles can respond to light differently from thermal atoms. In cold samples strong light-mediated resonant dipole-dipole interactions between atoms can be utilized in a control and storage of light. The method is based on a high-fidelity preparation of a collective atomic excitation in a single correlated subradiant eigenmode in a lattice. We demonstrate how a simple phenomenological model captures the qualitative features of the dynamics and sharp transmission resonances that may find applications in sensing.