MAR12-2011-006042

Abstract for an Invited Paper
for the MAR12 Meeting of
the American Physical Society

Entanglement, teleportation and memory in atomic spin ensembles

EUGENE POLZIK, Niels Bohr Institute, Copenhagen University

Recent experimental progress with entanglement generation and processing in macroscopic atomic spin ensembles will be reviewed. It includes atomic entanglement maintained for an unlimited time via engineered collective dissipation mediated by light and teleportation of collective atomic spin states. A proposal for quantum memory assisted detection of strongly coupled systems will be presented.