Abstract Submitted
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Towards quantum and non-linear optics with buffer-gas cooled atoms and molecules SOFIA MAGKIRIADOU, DAVE PATTERSON, ALEXEY GORSHKOV, ALEXANDER ZIBROV, MIKHAIL LUKIN, JOHN DOYLE, Harvard-MIT Center for Ultracold Atoms — We report on our progress towards using buffer-gas cooling to produce cold coherent optical media with high optical depth. Helium buffer gas is used to cool to a few Kelvin a continuous stream of Rb atoms produced in an oven. While the first experimental demonstration will focus on electromagnetically induced transparency in Rb, we envision a variety of applications, ranging from nonlinear and quantum optics to precision measurements, with atomic or molecular species that are much more difficult to cool using other methods.

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