

Abstract Submitted
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A two-species five-beam magneto-optical trap for highly magnetic Er and Dy atoms GIANMARIA DURASTANTE, PHILIPP ILZHOEFER, ALEXANDER PATSCHEIDER, University of Innsbruck, CLAUDIA POLITI, Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences, MAXIMILIAN SOHMEN, University of Innsbruck, ARNO TRAUTMAN, Institute for Quantum Optics and Quantum Information of the Austrian Academy of Sciences, MANFRED MARK, FRENDESCA FERLAINO, University of Innsbruck — We report on the first realization of a two-species magneto-optical trap (MOT) for erbium and dysprosium. The MOT operates on an intercombination line for the respective species. Owing to the narrow-line character of such a cooling transition and the action of gravity, we demonstrate a novel trap geometry employing only five beams in orthogonal configuration. We observe that the mixture is cooled and trapped very efficiently, with up to 5×10^8 Er atoms and 10^9 Dy atoms at temperatures of about $10 \mu K$. Our results offer an ideal starting condition for the creation of a dipolar quantum mixture of highly magnetic atoms.

Gianmaria Durastante
University of Innsbruck

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