

Abstract Submitted
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Non-destructive imaging of sodium spinor Bose-Einstein condensates EVA BOOKJANS, Georgia Institute of Technology, CHANDRA RAMAN, Georgia Institute of Technology — We report progress toward non-destructive, *in-situ* spatial imaging of spinor sodium Bose-Einstein condensates (BECs). Optically trapped samples containing between 10^6 and 10^7 condensed atoms are imaged. Due to its antiferromagnetic nature, the sodium spinor BEC possesses a nematic, rather than magnetic, order parameter. A novel imaging method can uncover the spatial dependence of this order, based upon detection of spin alignment rather than orientation. Our results have implications for dynamical studies of antiferromagnetic spinor gases, including the detection of novel topological defects.

Eva Bookjans
Georgia Institute of Technology

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