

Abstract Submitted
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Ultracold atoms in novel optical lattices NATHAN LUNDBLAD,
Bates College — We report progress towards optical lattice experiments using a
planned Bose-Einstein condensate of ^{87}Rb . We describe vacuum chamber construc-
tion, design and construction of a spin-flip Zeeman slower, characterization of laser
cooling tools, the results of magnetic trapping and evaporative cooling, and plans
for a hybrid dipole trap approach for reaching BEC, as well as optical lattice design
and construction.

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