

Abstract Submitted  
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**Evaporative Cooling Of a Photon Fluid to Quantum Degeneracy**

BRIAN SEAMAN, JILA, MURRAY HOLLAND — We demonstrate the conditions necessary for the condensation of photons in a Fabry-Perot cavity and the rise of coherent properties using evaporative cooling mechanisms traditionally associated with ultracold atomic condensates. The photons are able to collide through an atom-mediated interaction and become a photon fluid. The photons enter into a Poissonian number distribution and possess a narrow spectral linewidth. This state expresses both coherent and superfluid properties that should be able to be accessed experimentally.

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