

Abstract Submitted  
for the DAMOP19 Meeting of  
The American Physical Society

**An Optical Tweezer Array of Ultracold Molecules** LOIC ANDEREGG, LAWRENCE CHEUK, YICHENG BAO, SEAN BURCHESKY, KANG-KUEN NI, Harvard University, WOLFGANG KETTERLE, MIT, JOHN M. DOYLE, Harvard University — Arrays of single ultracold molecules promise to be a powerful platform for many applications ranging from quantum simulation to precision measurement. We report on the creation of an optical tweezer array of single ultracold CaF molecules with high-fidelity detection. By utilizing light-induced collisions during the laser cooling process, we trap single molecules. The high densities attained inside the tweezer traps have also enabled us to observe in the absence of light molecule-molecule collisions of laser cooled molecules for the first time.

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Date submitted: 31 Jan 2019

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