Permanent magnetic trap for improved OH evaporation efficiency
DAVID REENS, HAO WU, MATTHEW HUMMON, JUN YE, Univ of Colorado - Boulder — Evaporation of the hydroxyl radical (OH) has previously been demonstrated in our experiment, suggesting exciting prospects for further cooling and phase space density increase. Thus far evaporation efficiency has been limited by collision rate and vacuum lifetime, prompting an investigation of possible improvements. Monte Carlo simulations of a newly designed permanent magnetic trap with a factor of two steeper gradient and a more favorable loading geometry show an order of magnitude increase in initial density and in collision rate. We will report on the efficiency of OH evaporation in this improved trap.