## MAR17-2016-020104

Abstract for an Invited Paper for the MAR17 Meeting of the American Physical Society

## A single atom heat engine

ERIC LUTZ, University of Erlangen-Nuremberg

We review the miniaturization of heat engines towards the nanoscale. We discuss in detail the recent experimental realization of a single atom engine using an ultracold trapped ion coupled to engineered reservoirs. We further address the question of how to enter the quantum regime and exploit quantum effects to enhance the performance of the machine.