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Simulation and Preliminary Design of a Cold Stream Experiment on Omega EP SHANE COFFING, ADRIANNA ANGULO, MATT TRANTHAM, Univ of Michigan - Ann Arbor, GUY MALAMUD, Nuclear Research Center - Negev, Israel, CAROLYN KURANZ, R. P. DRAKE, Univ of Michigan - Ann Arbor — Galaxies form within dark matter halos, accreting gas that may clump and eventually form stars. Infalling matter gradually increases the density of the halo, and, if cooling is insufficient, rising pressure forms a shock that slows the infalling gas, reducing star formation. However, galaxies with sufficient cooling become prolific star formers. A recent theory suggests that so called "stream fed galaxies" are able to acquire steady streams of cold gas via galactic "filaments" that penetrate the halo. The cold, dense filament flowing into a hot, less dense environment is potentially Kelvin-Helmholtz unstable. This instability may hinder the ability of the stream to deliver gas deeply enough into the halo. To study this process, we have begun preliminary design of a well-scaled laser experiment on Omega EP. We present here early simulation results and the physics involved.

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