

We have simulated the cosmological Hubble friction using a toroidal Bose-Einstein condensate (BEC) of ^{23}Na atoms. Where scalar fields in a BEC (such as phonons) have behavior analogous to cosmological scalar fields. We have observed both damping and growth of the phonon field when the toroidal BEC is expanded or contracted respectively. This is analogous to the damping or enhancement of cosmological fields due to Hubble friction. Furthermore, the measured strength of the Hubble friction is in agreement with recently published theory. In addition, we have also performed a systematic study of the Doppler shifts due to the phonon dynamics.