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Ion friction in dual species ultracold plasma expansion[1] TUCKER SPRENKLE, Brigham Young Univ - Provo, ROSS SPENCER, SCOTT BERGESON, Brigham Young University — We create a dual-species ultracold neutral plasma (UNP) by photo-ionizing Yb and Ca atoms in a dual-species magneto-optical trap. Unlike single-species UNP expansion, these plasmas are well outside of the collisionless (Vlasov) approximation. We observe the mutual interaction of the Yb and Ca ions by measuring the rms expansion velocity for each ion species separately. We model the expansion using a fluid code including ion-ion friction.

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