

Drift wave instabilities in centrifugally-separated 2 species nonneutral plasmas

The heavier species is on the outside because of centrifugal separation.

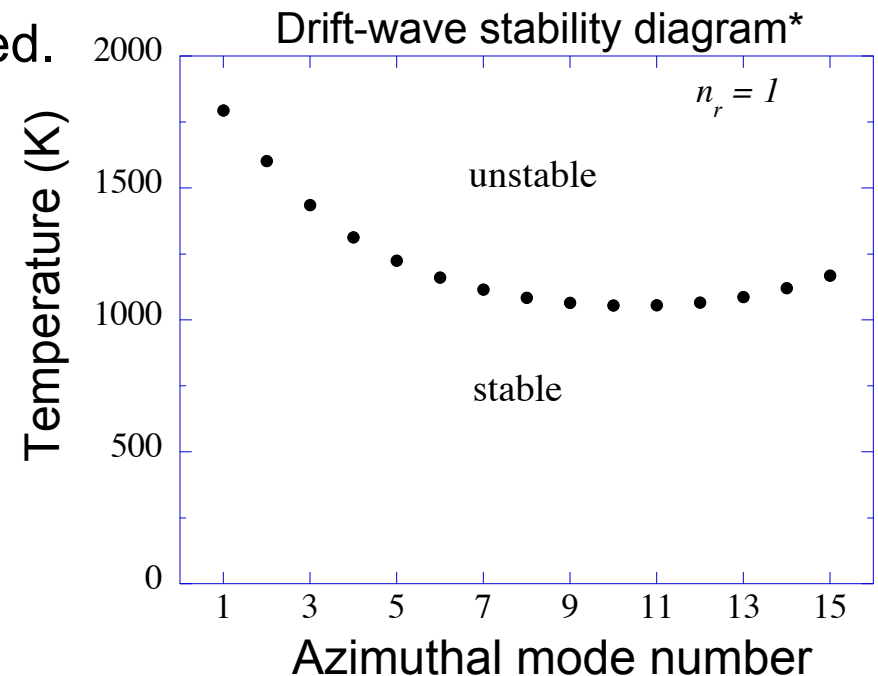
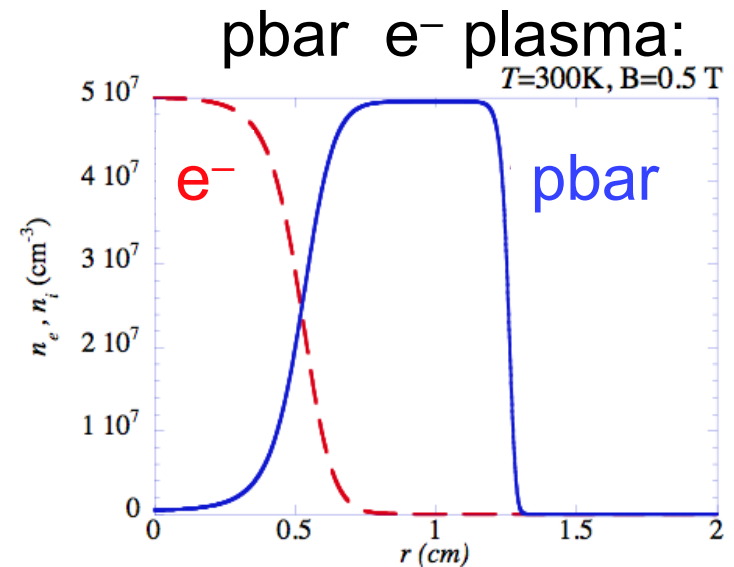
This separation impedes electron cooling of antiprotons at CERN.

The density profiles shown are in thermal equilibrium when $T=300$ K, so all modes are stable.

But if T increases, species want to be mixed. Collisional diffusion gives slow mixing.

However, mixing can also rapidly occur due to a **drift wave instability**.

Drift-unstable for $T > 1000$ K



*Dubin, Phys Plasmas 17, 112115 (2010)