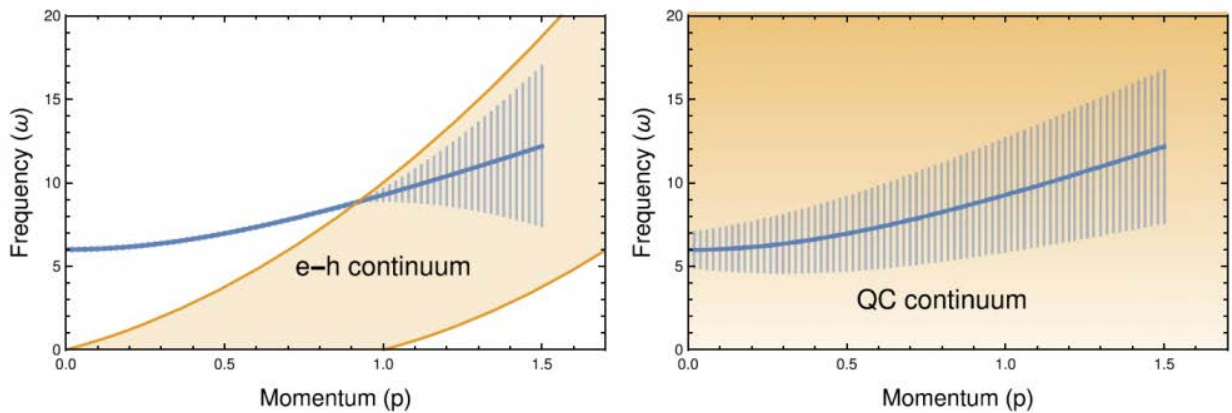


Holographic plasmons: generalizing the Landau damping



The study of the optical conductivity and equivalently the polarization propagator has been a central focus of AdS/CMT. However, nearly all these studies were limited to zero momentum. Presently a new generation of Electron-Loss machines are developed having the advantage that this spectrum of charge excitations can be studied both for arbitrary momenta and frequencies.

Among others this spectrum is dominated by the plasmon in charge systems and it is therefore timely to study this using holography. The novel insight is that the quantum critical “second sector” should be viewed as the generalization of the Lindhard (particle-hole) continuum of the Fermi liquid that is now giving rise to (generalized) Landau damping of the plasmon even at zero momentum.