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## Recent progress in hard-thermal-loop QCD thermodynamics and collective excitations

*Thursday, 1 September 2016 17:30 (30 minutes)*

I review recent developments in QCD thermodynamics and collective excitations from the hard-thermal-loop effective theory. I begin by motivating the discussion with open questions from heavy-ion collisions. I then discuss a finite-temperature and density calculation of QCD thermodynamics at NNLO from the hard-thermal-loop perturbation theory. Finally, I discuss a recent exploration of generalizing the hard-thermal-loop framework to the (chromo)magnetic scale  $g^2T$ , from which a novel massless mode is uncovered.

### Summary

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**Session Classification:** Section D

**Track Classification:** Section D: Deconfinement