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Lee-Yang edge singularities in QCD: From Fourier coefficients to parametrizations of the universal scaling functions.

We discuss the phase diagram of QCD and in particular the vicinity of the Roberge-Weiss transition, the chiral transition and the QCD critical end point. We argue that the universal location of the Lee-Yang edge singularity can be used to determine the exact locations of these transitions. In order to calculate the Lee-Yang edge from lattice QCD data we discuss two methods, which includes the calculations of Fourier coefficients of the (imaginary) baryon number density and the analytic continuation of the universal scaling function. For the latter, we use the Schofield parametrisation of the Widom-Griffiths form of the magnetic equation of state.

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