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## Lee-Yang zero from net baryon number multiplicity distributions

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We discuss feasibility of detecting the QCD phase boundary using Lee-Yang zero from the net baryon number multiplicity distributions. Since only limited number of net proton can be measured in heavy ion collisions, the canonical partition function extracted from the multiplicity distribution loses information stored in the tail of the distribution.

By using a random matrix model, we investigate the behavior of distribution of Lee-Yang zero in complex chemical potential plane with respect to cutting the tail part of the distribution and compare them with the exact phase boundary. We found the zero closest to the real axis is insensitive to the tail. We also discuss the difference of those from the non-critical Skellam distribution and the characteristics to the case with the phase transition.

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