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## **Deconfinement and ideal instanton gas in QCD**

In the high temperature, deconfined phase of QCD instantons are believed to form a non-interacting ideal gas, the properties of which could in principle be calculated using the dilute instanton gas approximation (DIGA). Lattice studies, however, show that the most important parameter of the instanton gas, the topological susceptibility is grossly underestimated by the DIGA. In the talk I will present a novel method, based on the spectrum of the lattice overlap Dirac operator, to count not only the net topological charge, but also the number of instantons and antiinstantons in the deconfined phase of QCD. Using this, I show that already from slightly above the critical temperature the obtained distributions fully agree with the ones expected for a non-interacting ideal gas.

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