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The Equation of State of QCD up to the Electro-Weak scale - part 1

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We present two non-perturbative strategies for computing the QCD Equation of State up to high temperatures, designed to be computationally efficient and based on shifted boundary conditions. Using Monte Carlo lattice simulations of QCD with 3 flavours of O(a)-improved Wilson massless quarks and the Wilson gauge action, we obtain results for the entropy density $s(T)/T^3$ in the continuum limit. Our findings cover a temperature range from a few GeV up to the Electro-Weak scale. Additionally, we compare our results with predictions from high-temperature perturbation theory. The details of the numerical computation are discussed in the companion talk (part 2) of this contribution.

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