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What is the surface tension of quark gluon bags?

We discuss the novel view at the colour confinement which,
on the one hand, allows us to find out the surface tension coefficient
of quark gluon bags and, under a plausible assumption, to determine the endpoint temperature of the QCD phase diagram, on the other hand.
The developed model considers the confining colour tube as the cylindrical
quark gluon bag with non-zero surface tension.
A close inspection of the free energies of elongated cylindrical bag and the confining colour tube that connects the static quark-antiquark pair
allows us to find out the string tension in terms of the surface tension, thermal pressure and the bag radius. Using the derived relation it is possible
to estimate the bag surface tension at zero temperature directly from the lattice QCD data. The requirement of positive entropy density of such bags leads to
negative values of the surface tension coefficient of quark gluon bags at the cross-over region, i.e. at the continuous transition to deconfined quarks and gluons.
It is shown that such an approach naturally accounts for an existence of a very pronounced surprising maximum of the string entropy observed in the lattice QCD simulations, which, as we argue, signals about the fractional surface formation of
the confining tube. Also we analyze the vicinity of the (tri)critical endpoint of the QCD phase diagram and discuss the role of vanishing surface tension coefficient for the endpoint existence.

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