REGGE TRAJECTORIES OF QUARK GLUON BAGS

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S u m m a r y

Using an exactly solvable statistical model, we discuss the equation of state of large/heavy and short-living bags of the quark gluon plasma (QGP). We argue that the large width of the QGP bags explains not only the observed deficit in the number of hadronic resonances, but also clarifies the reason why the heavy QGP bags cannot be directly observed even as metastable states in the hadronic phase. Also the Regge trajectories of large and heavy QGP bags are established both in vacuum and in a strongly interacting medium. It is shown that, at high temperatures, the average mass and width of the QGP bags behave in accordance with the upper bound of the Regge trajectory asymptotics (the linear asymptotics), whereas, for temperatures below $T_H/2$ (T_H is the Hagedorn temperature), they obey the lower bound of the Regge trajectory asymptotics (the square root one). Thus, for $T < T_H/2$, the spin of the QGP bags is restricted from above, whereas, for $T > T_H/2$, these bags demonstrate the standard Regge behavior consistent with the string models.