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## Charmonium abundance as a probe for remnants of confinement

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The charm quark at energies of the LHC and above is expected to remain well out of chemical equilibrium, with its abundance dominated by initial stage production, and yet be abundantly enough produced ( $N_{c\bar{c}} \simeq 10^2$ ) for coalescence to be non-negligible.

Using a simple analytically solvable model, we argue that it makes charmonium abundance the ideal probe of remnants of confinement, expected to be present at arbitrary high temperature [1,2] but thermodynamically irrelevant, since the nearest neighbor thermal scale  $1/T$  is parametrically smaller than the confinement scale. We show that confinement remnants, while not affecting averages and higher cumulants of light and strange hadrons, will dramatically affect charm recombination dynamics, preventing the onset of charmonium and charmed baryon enhancement for arbitrary  $\sqrt{s}$  and system size.

[1] D. Zwanziger, hep-ph/0303028 (PRD)

[2] G. Bali et al, hep-lat/9306024 (PRL)

[3] A. Maas et al, hep-ph/0408074 (EPJC)

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