



# XXIV QUARK MATTER DARMSTADT 2014

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## Charmonia formation in quark-gluon plasma

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Using the color evaporation model, the cross section for charmonium production in p+p collision is calculated in quark-gluon plasma.

The threshold energy for open charms is given by the free energy potential from lattice calculations, the initial charm quark pairs by the Pythia simulations, and their time evolution by solving the Langevin equation.

It is found that the threshold energy which decreases with temperature reduces the cross section while the invariant mass of charm pair which decreases by collisions enhances it.

As a result, charmonia production is suppressed by 30~50 % while  $J/\psi$  production is similar or enhanced compared to in vacuum.

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