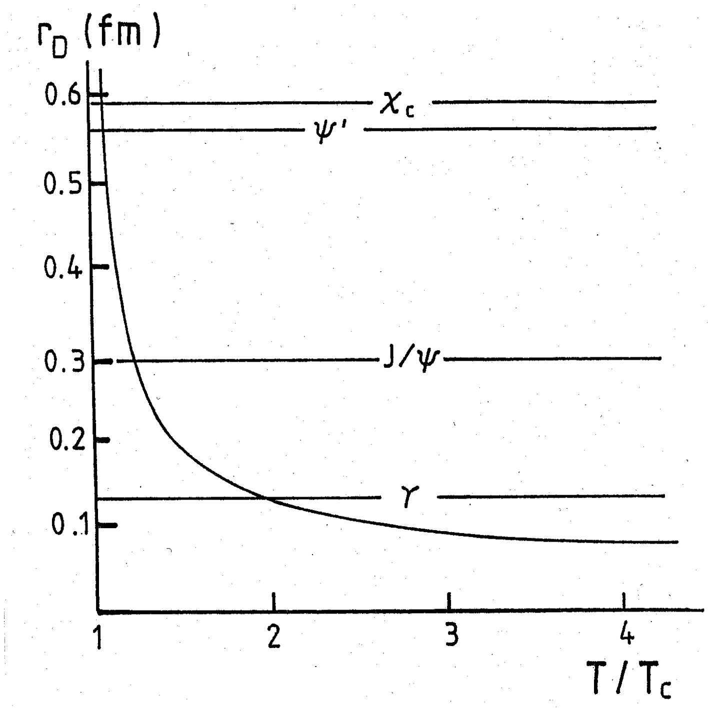
## charmonium production $gg \to c\bar{c}$ in dense matter

quark potential: $V(r) = (0.192GeV^2 \cdot r - 0.471/r) \cdot e^{r/r_D}$

Debye screened, $c\bar{c}$ not bound for $r < r_D$ (Matsui,Satz)




$\epsilon_D \sim 1.5GeV/fm^3$

$\epsilon_D \sim 3.6GeV/fm^3$

prediction of suppression has to take into account:

- 40% of $J/\Psi$ result from $\chi_c$ decay
- energy density changes with position/time
- formation time $t = \sqrt{1 + (p/m)^2} \cdot \tau_0 \Rightarrow$ suppression expected to disappear at high $p/p_T$

| | $J/\Psi$ | $\chi_c$ | $\Psi'$ |
|---|---|---|---|
| r(fm) | 0.453 | 0.696 | 0.875 |
| $\tau_0$(fm/c) | 0.89 | 2.01 | 1.50 |

- hadronic absorption, modification of gluon density
- contribution from statistical hadronisation