

# $J/\psi$ suppression at SPS and RHIC in the comovers approach

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## **Abstract**

The ratio  $R(E_T)$  of  $J/\psi$  over Drell-Yan  $E_T$  distributions in PbPb collisions measured by the NA50 collaboration presents two structures at  $E_T \sim 40$  GeV and  $E_T \sim 100$  GeV which have been interpreted as due to deconfining phase transitions. We show that the first structure can be interpreted as due to the effect of the intra-nuclear cascade in the backward rapidity region of the NA50 calorimeter - which modifies the relation between  $E_T$  and impact parameter. We also show that the second structure (slight change of curvature), which occurs at the knee of the  $E_T$  distribution, can be due to  $E_T$  fluctuations - which are responsible for the tail of the  $E_T$  distribution.

Predictions of  $J/\psi$  suppression at RHIC are presented. It is argued that the first structure will not be seen here since we are far from the region of intra-nuclear cascade. Likewise, the second structure will not be present at  $E_T \sim 100$  GeV since this value is much lower than that of the knee of the  $E_T$  distribution at RHIC. A perfectly smooth behaviour of  $R(E_T)$  will be observed between peripheral collisions and the knee of the  $E_T$  (or multiplicity) distribution - with a slight change of curvature beyond the knee.

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