Charmonia and heavy-flavour production in heavy ion collisions

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I review some results on charmonia, open charm and open beauty hadro-production, obtained in fixed-target experiments performed at FNAL, DESY and CERN. I then summarise our knowledge on the production of J/ψ and open charm in heavy ion collisions, obtained from measurements done at the CERN SPS and at RHIC. These results are very interesting to study the critical behaviour of QCD. However, some important questions remain open and require new data. The CERN NA60 experiment is now improving the measurements of open charm and charmonia production in p-A and In-In collisions. Finally, I show that measuring the open beauty production yield is very important for the proper interpretation of the J/ψ data collected at RHIC energies.