Charmonium in China: BEPCII/BESIII

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The Beijing Electron-Positron Collider has been upgraded to a two-ring collider (BEPCII) with a design luminosity of $1 \times 10^{33}\text{cm}^{-2}\ \text{s}^{-1}$ at a center-of-mass energy of 3.78 GeV. With this luminosity, the brand new BESIII detector will be able to collect, for example, more than 1 billion J/ψ events in one year of running. It will operate between 2 and 4.6 GeV, allowing precision studies of charmonium (J/ψ, ψ', $\psi(3770)$, η_c, χ_{cJ}, and h_c), charm (D and D_s mesons), and improved determinations of the tau mass and the hadronic cross section (R) in this energy region.

During 2009, BESIII acquired in four weeks of running a sample of 106 M ψ' events, or four times the CLEOc sample, and in six weeks of running about 220 M J/ψ events, or about four times the BESII J/ψ sample. Results will be presented from these first data sets including a confirmation of the $p\bar{p}$ threshold enhancement in $J/\psi \to \gamma p\bar{p}$, seen in BESII. Also measurements of the branching ratios for $\chi_{cJ} \to \pi 0 \pi 0$ and $\eta\eta$ and first measurements of the branching ratios for $\psi' \to \pi 0 h_c$ and $h_c \to \gamma \eta_c$, as well as measurements of the mass and width of the h_c, will be reported.

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