



CERN Joint EP/PP Seminars

SPEAKER: Claudia Patrignani (University and INFN Genova)

TITLE: **Observation of the $\eta_b(1S)$ in $Y(3S) \rightarrow \gamma \eta_b$ and bottomonium physics at BaBar**

DATE: Tue 16/09/2008 16:30

PLACE: Main Auditorium**

ABSTRACT

We report the observation of the bottomonium ground state, $\eta_b(1S)$, based on a study of the inclusive photon spectrum of (1091) millions $Upsilon(3S)$ recorded at the $Upsilon(3S)$ energy with the BABAR detector at the PEP-II B factory at SLAC. The hyperfine $Upsilon(1S)$ - $\eta_b(1S)$ mass splitting, a key ingredient in many theoretical calculations, is $71.4 \{+2.3\} \{-3.1\}$ (stat) 2.7 (syst) MeV/c². The precision of our measurement will allow, among others, a more precise determination of the lattice spacing and new precision determinations of α_s . Other results on bottomonium physics from BABAR will also be presented.