



Contribution ID: 92

Type: **Poster**

Search for a light Higgs Boson at Babar

Monday 4 June 2012 16:00 (1 hour)

Babar collided electrons and positrons at a centre of mass energy of $\sim 10\text{GeV}$ at the Stanford Linear Accelerator Center. A light CP-odd Higgs boson is expected in extensions to the Standard Model such as Next to Minimal Supersymmetry. The Babar Collaboration searched for a light Higgs boson (A_0) produced in radiative decays of an Y meson ($Y \rightarrow \gamma A_0$). We saw no evidence of the A_0 decaying into $\mu^+\mu^-$, $\tau^+\tau^-$, hadrons, or invisible final states with a sample of 122 million $Y(3S)$, 99 million $Y(2S)$, and 23 million $Y(1S)$ from $Y(2,3S)$ decays collected at the PEP II B-factory. We set upper limits on product branching fractions $B(Y \rightarrow \gamma A_0) \times B(A_0 \rightarrow \text{various states})$ as low as 10^{-6} for A_0 masses from threshold up to $9\text{GeV}/c^2$. As a result, we exclude a large fraction of parameters space for Next to Minimal Supersymmetry. Some searches are published and a few is still in the analysis stage. I will present work done by the collaboration as well as my work in progress for $Y(1S) \rightarrow \gamma A_0; A_0 \rightarrow \text{hadrons}$.

Funding Source

NSERC (Canada), et al

E-mail Address

rockyso@physics.ubc.ca

Collaboration Name
Please enter the name of the collaboration or group using the acronym, as in: ABC Collaboration

Babar Collaboration

Author: Mr SO, Rocky (University of British Columbia)

Presenter: Mr SO, Rocky (University of British Columbia)

Session Classification: 1D: Poster Session and Coffee Break

Track Classification: Higgs Boson