

## Decays of doubly charmed meson molecules

*Sunday, 27 October 2013 15:10 (20 minutes)*

Several observed states close to the  $D\bar{D}^*$  and  $D_{(s)}^*\bar{D}_{(s)}^*$  thresholds, as the X(3872) and some XYZ particles can be described in terms of a two-meson molecule. Furthermore, doubly charmed states are also predicted. These new states are near the  $D^*D^*$  and  $D^*D_s^*$  thresholds, and have spin-parity  $J^P = 1^+$ . Their natural decay modes are  $D_{(s)}D^*$ ,  $DD_{(s)}\pi$  and  $DD_{(s)}\gamma$  and  $D^*D_{(s)}\gamma$ . We evaluate the widths of these states, named here as  $R_{cc}$ (3970) and  $S_{cc}$ (4100), and obtain 44 MeV for the non-strangeness, and 24 MeV for the doubly charm-strange state. Essentially, the decay modes are  $DD_{(s)}\pi$  and  $DD_{(s)}\gamma$ , being the  $D\pi$  and  $D\gamma$  emitted by one of the  $D^*$  meson which forms the molecule.

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**Track Classification:** Parellel A