



Contribution ID: 32

Type: **Parallel Talk**

The invariant and helicity amplitudes in the transitions $\Lambda_b \rightarrow \Lambda^*(\frac{1}{2}^\pm, \frac{3}{2}^\pm) + J/\psi$.

Thursday, July 6, 2017 2:30 PM (15 minutes)

I present results for the invariant and helicity amplitudes in the transitions

$\Lambda_b \rightarrow \Lambda^*(J^P) + J/\psi$ where

$\Lambda^*(J^P)$ are *sud*-resonances with

$J^P = \frac{1}{2}^\pm, \frac{3}{2}^\pm$. The calculations are performed in the framework of our covariant confined quark model.

We find that the values

of the helicity amplitudes for the $\Lambda^*(1520, \frac{3}{2}^-)$

and $\Lambda^*(1890, \frac{3}{2}^+)$

are suppressed compared with those for the ground state $\Lambda(1116, \frac{1}{2}^+)$ and $\Lambda^*(1405, \frac{1}{2}^-)$.

This analysis is important for the identification of the charmed pentaquark P_c^+ since the cascade decay

$\Lambda_b \rightarrow \Lambda^*(\frac{3}{2}^\pm) (\rightarrow pK^-) + J/\psi$.

involves the same final states as the decay

$\Lambda_b^0 \rightarrow P_c^+ (\rightarrow pK^-) + J/\psi$.

I also discuss polarization effects in the cascade decay

$\Lambda_b \rightarrow \Lambda(1116) (\rightarrow p\pi^-) + J/\psi (\rightarrow \ell^+\ell^-)$.

This analysis was published in [1].

[1] T. Gutsche, M. Ivanov, J. Körner, V. Lyubovitskij and P. Santorelli,

Phys. Rev. D **88**, no. 11, 114018 (2013)

Experimental Collaboration

Primary author: Prof. IVANOV, Mikhail (Joint Institute for Nuclear Research)

Presenters: Prof. IVANOV, Mikhail (Joint Institute for Nuclear Research); IVANOV, Mikhail; IVANOV, Mikhail (Ecole Polytechnique Federale de Lausanne (CH)); IVANOV, Mikhail (Moscow State University)

Session Classification: Flavour and symmetries

Track Classification: Flavour Physics and Fundamental Symmetries