Contribution ID: **49** Type: **not specified**

Determining the photon polarization of the b->s gamma using the B->K1(1270)gamma->(Kpipi)gamma decay

Wednesday 13 April 2011 17:50 (15 minutes)

Recently the radiative B decay to the strange axial-vector mesons, B->K1(1270)gamma, has been observed with a rather large branching ratio. This process is particularly interesting as the subsequent K1 decay into its three body final state allows us to determine the polarization of the photon, which is mostly left- (right-)handed for Bbar(B) in the SM while various new physics models predict additional right- (left-)handed components. A new method is proposed to determine the polarization, exploiting the full Dalitz plot distribution, which seems to reduce significantly the statistical errors. This polarization measurement requires however a detailed knowledge of the K1->Kpipi strong interaction decays, namely, the various partial wave amplitudes into the several possible quasi two-body channels, as well as their relative phases. The pattern of partial waves is especially complex for the K1(1270). We attempt to obtain the information through the combination of an experimental input and a theoretical one, provided by the 3P0 quark-pair-creation model.

Author: TAYDUGANOV, Andrey

Presenter: TAYDUGANOV, Andrey

Session Classification: Beauty 3