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Enhanced CP violation in the Magnetic Field

We suggest, that specific decay channels of mesons can be influenced by external electromagnetic field of sufficient strength. In particular, CP - violating decay of Eta meson Eta−> Pi+Pi-, which is limited to BR < 10ˆ-27 in Standard Model, can become enhanced in the magnetic field. Phenomenon occurs due to quantum superposition of J=0 Eta meson state with (Sz=0) substate of (J=1) vector meson (decaying also to Pi+Pi- channel due to G parity violation). Such behavior corresponds to indirect CP violation due to mixing, which is enhanced by external magnetic field.

additional information

Similar Talk and Poster have been presented at Vienna Seminar 29. November 2014:

http://www.dkpi.at/wp-content/manual-uploads/vces2014_talks/02-sa/18-Filip.pdf

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