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CANCELLED Unitary coupled channel approach to diffractive scattering and its application to axial vector states

Monday 29 August 2016 18:00 (30 minutes)

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Summary

We show that a single $I = 1$ spin-parity $J^{PC} = 1^{++}$ a_1
resonance can manifest itself as two separated mass peaks, one decaying into an S-wave $\rho\pi$ system and the second
decaying into a P-wave $f_0(980)\pi$ system, with a rapid increase of the phase difference between their amplitudes arising mainly
from the structure of the diffractive production process. This study clarifies questions related to the mass, width, and decay rates of the
a_1 resonance raised by the recent high statistics data of the COMPASS collaboration on a_1 production in $\pi N \to \pi\pi\pi N$ at high energies. This presentation will be based on Phys Rev Letters 114, 192001 (2015) with Jean-Louis Basdevant and more recent research.

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