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A case for SU(3) in D to P P decays

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The question of the validity of analyzing charmed meson decays to pairs of hadrons within the SU(3) framework has been long and often debated. While there are convincing arguments that small breaking of this symmetry can accommodate for the current experimental results, the inability to compute QCD effects in these modes render it quite impossible to justify with complete authority the physical interpretations of the parameters extracted from experimental data. In our work we explore the SU(3) framework for its strengths and weaknesses and cross-examine it with arguments derived from a diagrammatic approach. We show that isospin non-universality of QCD should be considered within this framework. We also consider η - η' mixing in our attempt to build a complete analysis of these modes.

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