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The M 1 $\rightarrow$ l 1 l 2 M 2 decay

Abstract

We describe the decay of a pseudo-scalar meson into two leptons and another pseudo -scalar meson (M 1 $\rightarrow$ lepton 1 lepton 2 M 2) driven by the presence of a majorana neutrino. In addition to the known results in the literature, we provide a detailed analysis of the role of the different channels as a function of the majorana neutrino mass, we pay particular attention to the interference between the two channels when the two leptons are different. This triggers a game between the kinematically allowed majorana mass and the different contributions which can modify the branching ratio of the process. We explore these as a function of the majorana mass and decay width. We set bounds for the different cases, whenever experimental information is available.

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