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A large Muon Electric Dipole Moment from Flavor?

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We study the prospects and opportunities of a large muon electric dipole moment (EDM) of the order 10ˆ-24 ecm – 10ˆ-22 ecm. We investigate how natural such a value is within the general minimal supersymmetric extension of the Standard Model with CP violation from lepton flavor violation in view of the experimental constraints. In models with hybrid gauge-gravity mediated supersymmetry breaking a large muon EDM is indicative for the structure of flavor breaking at the Planck scale, and points towards a high messenger scale.

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