Title: A soft origin for CKM-type CP violation

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Abstract: We present a two-Higgs-doublet model, with a $Z(3)$ symmetry, in which CP violation originates solely in a soft (dimension-2) coupling in the scalar potential, and reveals itself solely in the CKM (quark mixing) matrix. In particular, in the mass basis the Yukawa interactions of the neutral scalars are all real. The model has only eleven parameters to fit the six quark masses and the four independent CKM-matrix observables. We find regions of parameter space in which the flavour-changing neutral couplings are so suppressed that they allow the scalars to be no heavier than a few hundred GeV. (C) 2011 Elsevier B.V. All rights reserved.

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