

## The approach to CP conservation in the 2HDM

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We review some CP-violation issues in the context of the Two-Higgs-Doublet model. In particular, we illustrate how the parameter space allowing spontaneous CP violation occurs on the border between the one allowing explicit CP violation and another where the potential has two minima. Also, we discuss how CP violation of either kind, stemming from the scalar sector, is related to the non-vanishing of certain quantities involving properties of all three neutral Higgs bosons. In addition to the three masses,  $H_i$ , the quantities involved, are two kinds of coupling coefficients, which we denote  $e_i$  and  $q_i$ . The  $e_i$  describe couplings among the neutral Higgs and  $Z$  bosons ( $H_iZZ$  or  $ZH_jH_k$ ,  $i \neq j \neq k \neq i$ ), whereas the  $q_i$  describe the couplings of neutral and charged Higgs bosons ( $H_iH^+H^-$ ).