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Renormalization of the mass matrix in a rephasing invariant parametrization

Saturday 6 August 2016 18:00 (2 hours)

It was pointed out that six rephasing invariant combinations can be constructed
from elements of the CKM matrix V: $\Gamma_{ijk} = V_{1i}V_{2j}V_{3k} = R_{ijk} - iJ$,
where (i, j, k) is cyclic permutation of $(1, 2, 3)$, R_{ijk} is the real part,
and the common imaginary part J is identified with the Jarlskog invariant.
In terms of this rephasing invariant parametrization,
the set of renormalization group equations (RGE) for the parameters
of the mass matrix can be cast in a compact and simple form.
In addition, these equations are shown to exhibit manifest
symmetry under flavor permutation. We discuss approximate
RGE invariants and solutions. Examples of numerical solutions are also provided.

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