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CP violation in charmless three-body B± meson decays at LHCb

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Searches for CP violation in the decays of B hadrons without charmed particles in the final state offer rich opportunities to test the Standard Model. Charmless b-hadron decays are suppressed in the Standard Model by small CKM matrix elements which brings the tree amplitudes to levels comparable with loop amplitudes, and potentially New Physics amplitudes. CP violation measurements using Dalitz plot analyses in multi-body decays allow to disentangle these various contributions. We report the most recent measurements from LHCb on charmless B± meson three-body decays, considering final states containing only charged light mesons: π−π−π+, K−π−π+, K−π−K+ and K−K−K+. A study of the distribution of CP asymmetries in the B± meson decay phase space is presented.

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