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CP violation in B –> D** tau nu

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Current measurements of the branching fractions for b –> c tau nu processes yield results that are more than 4 standard deviations higher than the standard-model expectations. This motivates exploration of potential new physics in these decays, including searches for CP violation. A CP-violating asymmetry requires interference between amplitudes with different CP-violating and CP-conserving phases. We show that these conditions can be satisfied in B –> D** tau nu in the presence of new physics, and describe a new method for measuring the asymmetry at Belle II or LHCb.

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