Proper time redefined

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© 2018 American Physical Society. A new definition of proper time, which may incorporate all of the fundamental interactions as well as the whole Poincaré group, is presented. The new proper time definition reduces to the usual one when neither interactions besides gravitational ones nor new group (such as Lorentz) transformations are considered. Physical implications of this new definition are discussed and a proposal for an experiment to check its validity is presented.