

Spinfoams, γ -duality and Parity Violation in the Primordial Universe

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The Barbero-Immirzi parameter appears in the EPRL spinfoam model via a duality rotation. In an effective field theory description, this duality rotation results in a relation between the coupling constants of parity-even and parity-odd higher-curvature terms. We study cosmic inflation in this effective theory and show that the observation of a primordial tensor polarization, together with the tensor tilt and the tensor-to-scalar ratio, provides a measurement of the Barbero-Immirzi parameter and, therefore, of the scale of the discreteness in loop quantum gravity.

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