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Tunneling of quantum geometries in spinfoams

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Quantum gravitational tunneling effects are expected to give rise to a number of interesting observable phenomena, including, in particular, the evolution of black holes at the end of their existence. Covariant Loop Quantum Gravity provides a framework to study these phenomena, yet a precise identification of tunneling processes is still not known. Motivated by tunneling processes, I will present the simplest case of Ponzano-Regge amplitudes in 3D: we find a surprising and detailed analogy of a class of transition amplitudes with tunneling processes in non-relativistic quantum mechanics.

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