

6.4 Implications for Quantum Gravity

The integration of quantum mechanics and general relativity within the 7dU framework addresses key challenges in quantum gravity.

Resolving Singularities

The chance dimension's fluctuating geometry prevents the formation of true singularities. Instead of spacetime collapsing to a single point, ξ introduces a probabilistic extension, maintaining finite curvature even under extreme conditions. [4]

Reinterpreting Spacetime

The 7dU model redefines spacetime as a probabilistic manifold, where classical geometry emerges as an averaged outcome of quantum-scale fluctuations.

Toward a Theory of Quantum Gravity

By embedding quantum mechanics in the geometry of spacetime, the 7dU framework provides a pathway toward a unified theory of quantum gravity, harmonizing the deterministic and probabilistic aspects of the universe.