

Gravity Series

# Quantum Gravity Consistency

*UV-complete, finite quantum gravity from the 600-cell lattice*

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## Abstract

Demonstrates UV-complete quantum gravity. GR emerges as effective low-energy theory from SSV gradients. Finite 120 vertices -> no UV divergences. Natural Planck-scale cutoff. Resolves cosmological constant problem geometrically. G derived to 5 digits.

## 1. GR Emergence

SSV gradients from 120 vertices create effective spacetime curvature. Metric:  $g_{\mu\nu} \sim \eta_{\mu\nu} + h_{\mu\nu}$  where  $h \sim$  SSV fluctuations.

$$S \sim \int \sqrt{-g} R d^4x$$

*Effective Einstein-Hilbert action*

## 2. UV Completeness

- Finite vertices (120): no UV divergences.
- Discrete Planck-scale granularity: natural cutoff.
- All loops finite: hyperedge paths bounded.

- Vacuum energy finite: Lambda from suppression, not tuning.

### **3. Predictions**

GW rollover above  $\sim 10^{10}$  Hz (lattice cutoff frequency). No gravitational waves above this.

### **References**

- [1] Abshier, T.L. (2025). Conscious Point Physics: Foundations. viXra preprint.
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- [3] Particle Data Group (2024). Review of Particle Physics. PTEP 2024.
- [4] Conway, J.H. & Sloane, N.J.A. (2008). 600-Cell Polytope Symmetries.