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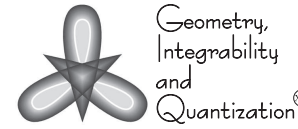

EVIDENCE OF A 6.12×10^{18} GeV PARTICLE: DETECTION AND MATHEMATICS

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Abstract. In a new approach the graviton is defined as the field particle of spacetime rather than the mediator of gravity. The unification equation is derived and used to predict that for a freely falling body, the energy of incident gravitons is 6.12×10^{18} GeV. Redshift and scattering of gravitons should produce diffraction patterns, galactic halos and expansion of the Universe. The energy of incident gravitons remains constant as the Universe evolves because of the Doppler shift as bodies fall towards redshifted gravitons. Complex space is used to represent gravitons and explain Young's two-slit interference. The approach is corroborated by empirical data and extends establish theory.

MSC: 81V22, 83B05, 83C45, 85A05, 83E99
Keywords: Dark energy, dark matter, graviton, Lorentz boost, Minkowski spacetime, spacetime-interval, spacetime-particle, two-slit interference

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