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## EVIDENCE OF A $6.12 \times 10^{18}$ 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  $6.12 \times 10^{18}$  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.

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## **CONTENTS**

1.	Introduction	. 205
2.	A Mechanism for Spacetime	. 205
3.	Deriving the Unification Equation	. 207
4.	The Energy of Incident Gravitons	. 208
5.	The Expanding Universe	. 210
6.	Diffraction Patterns of Gravitons	. 211
7.	Mathematically Representing Gravitons	. 215
8.	Special Relativity with Gravitons	. 217
9.	Euler's Formula	. 219
10.	Young's Two-Slit Interference	. 220
11.	Conclusion	. 222
Acknowledgements		. 223
Ref	Ferences	. 223