

Gravity and unification: hints from microphysics and cosmology

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<https://doi.org/10.61109/cs.202504.146>


Citation: K.S. Stelle, Gravity and unification: hints from microphysics and cosmology, *Coshare Science* **03**, 02 (2025)

Author introduction

Kellogg S. Stelle earned his Ph.D. from Brandeis University. He is currently a Professor of Physics in the Department of Physics at Imperial College London. His research focuses on the theory of gravitation, on gauge and supersymmetric field theories and on string theory. He has been a pioneer in the study of higher dimensional extended objects, known as branes, in supersymmetric and string theories, and in the analysis of counterterms for ultraviolet divergences in supersymmetric field theories. He was a 2006 winner of the Alexander Von Humboldt Foundation Research Award and a 2020 winner of IoP John William Strutt, Lord Rayleigh Medal and Prize. He is a fellow of the Institute of Physics and of the American Physical Society.



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Abstract Elementary Particle Physics and General Relativity relate respectively to the very small and the very large. But they are both essential in trying to understand the structure of the universe, especially at the very first instants. Some of the key ideas involved in this juncture of the very small and the very large are illustrated.

Keywords elementary particle physics, general relativity, extra spacetime dimensions, gravity waves, the universe as a membrane

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