

DE MADRID AL COSMOS

THE COSMOLOGICAL CONSTANT PROBLEM: A LESSON FROM HELIUM-3

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Abstract: The effective gravity emerging for relativistic quasi-particles in superfluid $^3\text{He-A}$ provides a direct connection between the properly determined vacuum energy and the cosmological constant λ . This connection is non-trivial, and requires a detour via the masses of the 'gravitons' in the associated bi-metric gravity. Although the cosmological constant λ turns out to be huge—it is determined by the effective Planck scale—the cosmological term (the stress-energy tensor associated to λ) is in fact naturally non-constant and vanishes in the equilibrium vacuum, as dictated by thermodynamics. This suggests that the equilibrium state of any condensed-matter system, and perhaps also the final state of the Universe, is not gravitating.

Fecha:

Martes 3 de junio
10:00 h.

Lugar:

Sala de Seminarios FT-I
Facultad de CC. Físicas, UCM



Ciclo de seminarios organizado conjuntamente por los grupos
· *Teorías Efectivas en Física Moderna* (UCM)
· *Gravitación y Cosmología* (IEM-CSIC)

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