

PHYSICS DEPARTMENT SEMINARS



14/10/2026

**Feza Gürsey Seminar
Room
Seminar 15:30**

Speaker:

Vasileios LETSIOS
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Microscopics of higher-spin gravity with $\Lambda > 0$ and the Euclidean path integral

In this talk, I will discuss recent findings concerning the Euclidean four-sphere (S^4) path integral of de Sitter (dS) higher-spin gravity, with special emphasis on the microscopic completion of the theory. I will explain how, based on a one-loop analysis, we are led to a gluing formula expressing the full S^4 path integral in terms of an underlying S^3 path integral. The S^3 is viewed as a boundary hypersurface splitting S^4 into two halves. For a higher-spin spectrum containing even spins only, the theory living on the S^3 boundary is the $Sp(N)$ -invariant sector of N anti-commuting, conformally coupled free scalars, with conformal higher-spin sources mediating the gluing. I will then shift focus to the supersymmetric case, where the gluing formula is instead built from an $N=2$ superconformal boundary field theory coupled to $U(N)$ invariant superconformal sources. Remarkably, the leading contribution to the S^4 partition function is 2^N , aligning well with a "count of states" interpretation of the path integral. These results are based on joint work with D. Anninos, C. Baracco and B. Mühlmann (arxiv:2602.19812).