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Renormalized Volume/Area from Conformal Gravity

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Within a holographic framework, we explore the physical consequences of embedding Einstein gravity with negative cosmological constant in Conformal Gravity in four dimensions. In the bulk, the procedure is equivalent to Holographic Renormalization, as the Einstein-AdS action appears augmented by the correct boundary counterterms. In codimension-2, 4D Conformal Gravity induces a 2D conformal invariant leads to a Renormalized Area for minimal surfaces. For arbitrary surfaces, this proposal extends the notion of renormalized area to other energy functionals as Willmore Energy and Reduced Hawking Mass. In particular, this procedure may be thought as a more geometric approach to the computation of Holographic Entanglement Entropy for CFTs dual to 4D Einstein gravity.

Presenter: OLEA, Rodrigo**Session Classification:** Keynote