

CMM PDE Seminar

Speaker: Rodrigo Olea, Pontificia Universidad Católica de Valparaíso (PUCV)

Title: Renormalized Volume/Area from Conformal Gravity

Abstract: We introduce a mechanism (Conformal Renormalization) to cancel divergences in Einstein gravity for asymptotically hyperbolic Einstein (AHE) spaces. In the bulk, the procedure amounts to embedding Einstein gravity in Conformal Gravity, whose action is given by a conformal invariant in four dimensions. This scheme is proved to be equivalent to both holographic techniques (for physicists) and the notion of Renormalized Volume (for mathematicians).

In turn, for surfaces anchored to the conformal boundary of AHE spaces, its area and other co-dimension 2 functionals also exhibit a divergent behavior. We show how Conformal Gravity in the bulk induces a finite surface/energy functional which, for suitable conditions, reduces to the formulas of Renormalized Area, Reduced Hawking Mass and Willmore Energy.

The talk will be held in person

Venue: DIM seminar room, Beauchef 851, 5th floor.

Zoom:

<https://uchile.zoom.us/j/93613339766?pwd=vB3J7Vhb0EX3kQDHfH741CKN19Y>

Friday, August 8thd at 12:10 pm..

For further information, see our webpage: <https://eventos.cmm.uchile.cl/pdeseminar/>

