

1147-53-202

Andrew K Waldron* (wally@math.ucdavis.edu), Department of Mathematics, University of California, One Shields Avenue, Davis, CA 95616, and **A. Rod Gover**. *Renormalized Volumes and Generalized Willmore Energies*.

The geometry of hypersurfaces embedded in conformal manifolds can be studied using holographic methods inspired by the physics AdS/CFT correspondence. In particular, local invariant theory can be treated by considering a singular version of the classical Yamabe problem. Invariants generalizing the Willmore energy and its functional gradient derive from the problem of regulating singular volume problems for regions anchored at the hypersurface of interest. These results and ideas fit into a broader program aimed at treating geometric aspects of the AdS/CFT correspondence by employing tractor calculus and methods from parabolic geometries. (Received January 09, 2019)