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The holographic formula for Q-curvature

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In the early 90's Branson introduced a scalar curvature invariant with remarkable transformation properties. That quantity is now called Branson's Q-curvature. Since then it appeared in various new contexts (for instance in the AdS/CFT-duality) and is studied intensively from various points of view. In joint work with R. Graham we found an explicit formula for Branson's Q-curvature in all even dimensions. The ingredients in the formula come from the Poincare metric in one higher dimension; hence the formula is called holographic. When specialized to the conformally flat case, the holographic formula expresses Q-curvature as a multiple of the Pfaffian and the divergence of a natural one-form. The formula is suggested by a theory of conformally covariant families of differential operators associated to submanifolds.

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