Andreas Juhl
The holographic formula for Q-curvature

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Institut für Mathematik
Rudower Chaussee 25, Raum I.410
12489 Berlin

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.

Contact:
Humboldt-Universität zu Berlin . Institut für Mathematik
SFB 647 . Unter den Linden 6 . 10099 Berlin
Tel. +49 30 2093 1804 . Fax. +49 30 2093 2727
sfb647@math.hu-berlin.de