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Alice Chang, Dept. of Math., Princeton University, Princeton, NJ 08544, **Jie Qing***, Dept. of Math., University of California, Santa Cruz, CA 95064, and **Paul Yang**, Dept. of Math., Princeton University, Princeton, NJ 08544. *On the renormalized volumes for conformally compact Einstein manifolds.*

We study the renormalized volume of a conformally compact Einstein manifold. In even dimensions, we derive the analogue of the Chern-Gauss-Bonnet formula incorporating the renormalized volume. When the dimension is odd, we relate the renormalized volume to the conformal primitive of the Q-curvature. We also show how all the global information come from the scattering. (Received September 06, 2006)