1023-53-1808 **Alfredo Villanueva*** (`avillanu@math.uiowa.edu`), The University of Iowa, Department of Mathematics, Iowa City, IA 52242. *On Conformal Invariant First Order Symmetry Operators of Powers of the Laplacian.* Preliminary report.

Symmetry operators D and $\widehat{D}$ of power of the Laplacian are differential operators such that $\Delta^k D = \widehat{D}\Delta^k$. These operators (first order) associated to conformal Killing tensors are well understood, even for power of the Conformal Laplacian in a curved setting. Behind these results are densities and generalized Verma Modules.

This article describes an alternative to compute these symmetry operators; we first find a general form for D and $\widehat{D}$ (with general coefficients). Second we compute $\Delta^k D - \widehat{D}\Delta^k$, here the strategy is to make changes of variables, and expressing higher derivatives in terms of those new variables, finally setting $\Delta^k D - \widehat{D}\Delta^k = 0$, we will have the right coefficients for D and $\widehat{D}$. (Received September 26, 2006)