1047-35-152 **Albert Baernstein II*** (al@math.wustl.edu), Math, Washington University, St.Louis, MO 63130, and **A. Yu Solynin**. *Monotonicity and comparison results for conformal invariants.* Preliminary report.

Suppose that Ω is an n-fold symmetric domain in the plane and that u is a function in the plane which satisfies a differential inequality $\Delta u \geq \gamma(u) + f$ in Ω. Assume also that u is constant outside Ω. We prove that if γ and f satisfy certain conditions, among them that f be n-fold symmetric, then u is n-fold symmetric.We prove also that if u is desymmetrized in a certain way, then the function thus obtained is majorized by a function v which satisfies $\Delta v \leq \gamma(v) + f_1$, where f_1 is a correspomding desymmetrization of f. These results permit us to solve some extremal problems involving Poincaré metrics, harmonic measure and capacities. (Received January 27, 2009)