Symmetrization of Poisson's equation
with Neumann boundary conditions

JEFFREY J. LANGFORD

Abstract. In this paper, we compare the solutions of two PDEs with Neumann boundary conditions, one with given initial data and one with cap symmetrized data. We show that the solution with cap symmetrized data is itself cap symmetrized and exhibits larger convex means. As corollaries, we prove comparison results on spheres and hemispheres, and prove a conjecture of B. Kawohl.