

Meeting: 1002, Pittsburgh, Pennsylvania, SS 12A, Special Session on Geometric Analysis and Partial Differential Equations in Subelliptic Structures

1002-35-147 **Vasilii V. Kurta*** (vvk@ams.org), 416 Fourth Street, Ann Arbor, MI 48107-8604. *About a Liouville phenomenon for supersolutions of elliptic partial differential equations.*

Due to the famous Liouville theorem it is well known that any superharmonic function on \mathbb{R}^2 bounded below by a constant is itself a constant. On the other hand it is also well known that for $n \geq 3$ there exist non-constant superharmonic functions on \mathbb{R}^n bounded below by a constant. The purpose of this work is to determine for $n \geq 3$ the ‘sharp distance at infinity’ between the non-constant superharmonic functions on \mathbb{R}^n bounded below by a constant and this constant itself in the form of a Liouville-type theorem and to characterize basic properties of quasilinear elliptic partial differential operators, which make it possible to obtain such a Liouville-type theorem for supersolutions of quasilinear elliptic partial differential equations of the form $A(u) = 0$. Typical examples of the operator $A(u)$ are the p -Laplacian, the mean curvature operator, and their well-known modifications. (Received September 13, 2004)