1012-35-112 **E. DiBenedetto*** (em.diben@vanderbilt.edu), Department of Mathematics, Vanderbilt Univ., Nashville, TN 37240, and Ugo Gianazza and Vincenzo Vespri. A new proof of the intrinsic Harnack estimate for non-negative local solutions of the parabolic p-Laplacian equation. Preliminary report.

We establish the intrinsic Harnack inequality for non-negative local solutions of the p-Laplacian equation by a proof that does not use nether the comparison principle nor explicit self-similar solutions. The significance is that the proof applies to quasilinear p-laplacian type equations thereby solving a long standing problem in degenerate PDE. (Received September 14, 2005)