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Comparison principle and convexity preserving properties for singular degenerate parabolic equations on unbounded domains. (English) Zbl 0836.35009

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Summary: We prove comparison theorems for viscosity solutions of singular degenerate parabolic equations of general form in a domain not necessarily bounded. We also prove that the concavity of solutions is preserved as time develops under additional assumptions on the equations. Both results apply to various equations including the mean curvature flow equation where every level set of solutions moves by its mean curvature.

MSC:

35B05 Oscillation, zeros of solutions, mean value theorems, etc. in context of PDEs

35K65 Degenerate parabolic equations

Cited in **2** Reviews
Cited in **87** Documents

Keywords:

viscosity solutions; singular degenerate parabolic equations; mean curvature flow equation

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