Singular Backward Self-Similar Solutions of a Semilinear Parabolic Equation

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Abstract

We study the Cauchy problem for a semilinear parabolic equation. Our concern is the existence of a singular solution whose singularity becomes anomalous in finite time. First we study the structure of singular radial solutions for an equation derived by backward self-similar variables. Using this, we obtain a singular backward self-similar solution whose singularity becomes stronger or weaker than that of a singular steady state. This talk is a joint work with Eiji Yanagida (Tohoku University).