
The porous medium equation on manifolds with conical singularities

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Abstract

We consider the porous medium equation on manifolds with conical singularities. We show existence, uniqueness and maximal L^p -regularity of a short time solution. In particular, we obtain information on the short time asymptotics of the solution near the conical point. Our method is based on bounded imaginary powers results for cone differential operators on Mellin-Sobolev spaces and R -sectoriality perturbation techniques.

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