

# The well-posedness and long-time behavior of the nonlocal diffusion porous medium equations with nonlinear term

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## Abstract

In this paper, we mainly consider the well-posedness and long-time behavior of solutions for the nonlocal diffusion porous medium equations with nonlinear term. Firstly, we obtain the well-posedness of the solutions in  $L^1()$  for the equations. Secondly, we prove the existence of a global attractor by proving there exists a compact absorbing set. Finally, we apply index theory to consider the dimension of the attractor and prove that there exists an infinite dimensional attractor of the equations under proper conditions.

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