



HACETTEPE ÜNİVERSİTESİ

MATEMATİK BÖLÜMÜ



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Long-Time Dynamics of Singular-Degenerate Porous Medium Type Equations Arising in Models for Biofilm Growth

In this talk, we study the long-time dynamics of solutions to initial-boundary value problems for a class of singular-degenerate porous medium type equations in bounded domains with homogeneous Dirichlet boundary conditions. We establish the existence of global attractors under very general assumptions. With additional regularity, we further prove the existence of an exponential attractor, which ensures that the global attractor has finite fractal dimension. We also extend these results to coupled systems in which the degenerate equation is combined with a semilinear reaction-diffusion equation. The study of such systems is motivated by models for biofilm growth.



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