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论文

A KIND OF STRUCTURE MODELS FOR DOUBLE POROSITY MEDIUM SYSTEMS AND ITS IDENTIFICATION PROBLEMS

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摘要 This paper studies problems of modeling and simulation for infinite-dimensional systems. In early 1960's, G. I. Barenblatt and the others proposed the well-known permeable models through double porous media. It is an essential hypothesis for those models that every point belongs to both the fracture system and the pore system in a domain.However, in real gas or oil reservoirs, distribution of fractures and pores is so heterogeneous that the ideal "duality" does not exist anywhere and the double porosity structure disappears locally. On the basis of the facts, we set up block structure models to extend Barenblatt models, derive their approximate semidiscrete forms, prove the uniqueness and existence of their solutions, and discuss problems concerning system parameter identification, such as the techniques of identification and identifiability for the corresponding linear multivariable systems.

关键词 System modeling and simulation, identifi

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