浸透媒質方程式の研究

1998 Fiscal Year Final Research Report Summary

Studies on the porous media equation

Research Project

Project/Area Number

09640169

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

解析学

Research Institution

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Project Period (FY)

1997 – 1998

Keywords

porous media / Cauchy problem / elastostatics

Research Abstract

1. Porous media equation
We considerd the Cauchy problem of the porous media equation. We showed that its spherically symmetric solution has the same property as Barenblatt so1ution, with respect to some regularity property.
2. Equation of linear elastostatics (joint work with K.Wada)
The equation of linear elastostatics was treated in the famous book of Duvaut and Lions, where the existence and the uniqueness off solutions were shown under discontinuous boundary condition. We proved some regularity property for these solutions.

Research Products (7 results)

All | Other

All | Publications (7 results)

[Publications] 林田和也: "Barenblatt solution and spherically symmetric solutions of the porous media equation" Applicable Analysis. 69. 387-407 (1998)

[Publications] 林田和也,和田晃治: Jpn. J. Indust, Appl. Math.16印刷中. (1999)

[Publications] K.Hayasida: "Barenblatt solution and spherically symmetric solutions of the porous media equation" Applicable Analysis. 69. 387-407 (1998)

[Publications] K.Hayasida and K.Wada: "On the regularity property for solutions of the equation of linear elastostatics with discontinuous boundary condition" Jpn J.Indust.Appl.Math.(to appear).

[Publications] S.Omata, T.Okamura and K.Nakane: "Numerical analysis for the discrete Morse semi-flow related to the Ginzburg Landau functional" Nonlinear Analysis. (to appear).

[Publications] T.Ichinose and H.Tamura: "Error estimate in operator norm of exponential product for-mula of parabolic evolution equations" Osaka J.Math. 35. 751-770 (1998)

[Publications] M.Mei: "Asymptotic behavior of solutions for a degenerate hyperbolic system of viscous conservation laws" Z.Angew.Math.Phys.(to appear).

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