

**Jokhadze, O.**

**Spatial problem of Darboux type for one model equation of third order.** (English)

Zbl 0864.35067

Georgian Math. J. 3, No. 6, 547-564 (1996).

Summary: For a hyperbolic type model equation of third order a Darboux type problem is investigated in a dihedral angle. It is shown that there exists a real number  $\rho_0$  such that for  $\alpha > \rho_0$  the problem under consideration is uniquely solvable in the Fréchet space. In the case where the coefficients are constants, Bochner's method is developed in multi-dimensional domains, and used to prove the unique solvability of the problem both in Fréchet and in Banach spaces.

**MSC:**

35L35 Initial-boundary value problems for higher-order hyperbolic equations  
35A05 General existence and uniqueness theorems (PDE) (MSC2000)

Cited in 2 Documents

**Keywords:**

dihedral angle

**Full Text:** [DOI](#) [EMIS](#) [EuDML](#)

**References:**

- [1] G. Darboux, Lecons sur la théorie générale des surface, troisième partie. Gauthier-Villars, Paris, 1894.
- [2] J. Hadamard, Lectures of Cauchy's problem in linear partial differential equations. Yale Univ. Press, New Haven; Oxford Univ. Press, London, 1923. · Zbl 49.0725.04
- [3] E. Goursat, Cours d'analyse mathématique. t. III, quatr. éd, Gauthier-Villars, Paris, 1927.
- [4] J. Tolen, Probleme de Cauchy sur la deux hypersurface caracteristique sécantes. C. R. Acad. Sci. Paris, Ser. A-B 291(1980), No. 1, A49-A 52 · Zbl 0457.35057
- [5] S. S. Kharibegashvili, On a characteristic problem for the wave equation. Proc. I. Verkua Inst. Appl. Math. (Tbil. Gos. Univ. Inst. Prikl. Mat. Trudy), 47(1992), 76–82. · Zbl 1018.35001
- [6] S. Kharibesashvili, On a spatial problem of Darboux type for a second order hyperbolic equations. Georgian Math. J. 2(1995), No. 3, 299–311.
- [7] S. Kharibegashvili, On the solvability of a spatial problem of Darboux type for the wave equation. Georgia Math. J. 2(1995), No. 4, 385–394. · Zbl 0842.35052
- [8] S. S. Akhieiev, Fundamental solutions of some local and nonlocal boundary value problems and their representation. (Russian) Dokl. Akad. Nauk SSSR 271(1983), No. 2, 265–269.
- [9] R. Di Vincenzo and A. Villani, Sopra und problema ai limiti per un'equazione lineare del terzo ordine di tipo iperbolico. Esistenza, unicita e rappresentazione della soluzione. Le Matematiche, Seminario matematico dell' Universita di Catania XXXII(1977), 211–238. · Zbl 0434.35073
- [10] S. Bochner, Beitrage zur Theorie der fastperiodischen Funktionen. Math. Ann. 96(1927), 119–147.
- [11] S. Bochner, Beitrage zur absoluten Konvergenz fastperiodischen Fourierreihen. Jahresberichte d.D.M.V. 39(1930), 52–54.
- [12] S. Bochner, Allgemeine lineare Differenzengleichungen mit asymptotisch konstanten Koeffizienten. Math. Z. 33(1931), 426–450. · Zbl 57.0534.06

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.