

**Aizawa, Sadakazu**

**Differentiability of the generalized solution of a non-linear wave equation.** (English)

Zbl 0133.35801

Proc. Japan Acad. 38, 69-74 (1962).

Der Verf. behandelt das charakteristische Anfangswertproblem für die nichtlineare Wellengleichung

$$\partial^2 u / \partial x_1^2 - \partial^2 u / \partial x_2^2 - \partial^2 u / \partial x_3^2 = f(x_1, x_2, x_3; u)$$

mit verschwindenden Anfangsbedingungen und beweist unter diesen Voraussetzungen die Existenz einer zweimal stetig differenzierbaren Lösung. Anschließend werden einige Differenzierbarkeitseigenschaften der Lösungen diskutiert.

Reviewer: H. Niemeyer

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**MSC:**

35L70 Second-order nonlinear hyperbolic equations

35D99 Generalized solutions to partial differential equations

**Keywords:**

[differentiability](#); [generalized solution](#); [nonlinear wave equation](#)

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

**References:**

- [1] S. Aizawa: On the characteristic initial value problem for non-linear wave equations in two space variables, Funkcialaj Ekvacioj, 3, 115-146 (1961). · [Zbl 0133.35704](#)
- [2] M. Riesz: L'intégrale de Riemann-Liouville et le probleme de Cauchy, Acta Math., 81, 1-223 (1949). · [Zbl 0033.27601](#) · [doi:10.1007/BF02395016](#)

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