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Cauchy's problem and Huygens' principle for relativistic higher spin wave equations in an arbitrary curved space-time. (English) [Zbl 0564.35091](#)
Gen. Relativ. Gravitation 17, 15-38 (1985).

Relativistic spin $s(s \geq 1/2)$, nonzero mass equations are given which in an arbitrary curved space-time are internally consistent. By means of Riesz' integration method a representation theorem for the solution of Cauchy's problem, using the constraints of the Cauchy data on the initial hypersurface and suitable "Green's formulas," is proved. Finally, a necessary and sufficient condition for the validity of Huygens' principle is stated from which it follows that only in space-times of constant curvature do the field equations satisfy Huygens' principle.

MSC:

[35Q99](#) Partial differential equations of mathematical physics and other areas of application

[35C15](#) Integral representations of solutions to PDEs

[83C15](#) Exact solutions to problems in general relativity and gravitational theory

Cited in **2** Reviews
Cited in **14** Documents

Keywords:

Relativistic spin; nonzero mass equations; curved space-time; Riesz' integration method; representation theorem; Cauchy's problem; Huygens' principle

Full Text: [DOI](#)

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