

1. Record Nr.	UNISALENT0991003324909707536
Autore	Nishitani, Tatsuo
Titolo	Hyperbolic systems with analytic coefficients : well-posedness of the Cauchy problem / Tatsuo Nishitani
ISBN	9783319022727 (pbk.)
Descrizione fisica	viii, 237 p. : ill. ; 24 cm
Collana	Lecture notes in mathematics, 0075-8434 ; 2097
Classificazione	AMS 35L45 AMS 35L40 AMS 35L55
Disciplina	515.35
Soggetti	Cauchy problem Differential equations, Hyperbolic
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index
Nota di contenuto	Necessary conditions for strong hyperbolicity ; Two by two systems with two independent variables ; Systems with nondegenerate characteristics
Sommario/riassunto	This monograph focuses on the well-posedness of the Cauchy problem for linear hyperbolic systems with matrix coefficients. Mainly two questions are discussed: (A) Under which conditions on lower order terms is the Cauchy problem well posed? (B) When is the Cauchy problem well posed for any lower order term? For first order two by two systems with two independent variables with real analytic coefficients, we present complete answers for both (A) and (B). For first order systems with real analytic coefficients we prove general necessary conditions for question (B) in terms of minors of the principal symbols. With regard to sufficient conditions for (B), we introduce hyperbolic systems with nondegenerate characteristics, which contains strictly hyperbolic systems, and prove that the Cauchy problem for hyperbolic systems with nondegenerate characteristics is well posed for any lower order term. We also prove that any hyperbolic system which is close to a hyperbolic system with a nondegenerate characteristic of multiple order has a nondegenerate characteristic of the same order nearby

