1.	Record Nr.	UNISALENTO991003324949707536
	Autore	Nishitani, Tatsuo
	Titolo	Hyperbolic Systems with Analytic Coefficients [e-book] : Well-posedness of the Cauchy Problem / by Tatsuo Nishitani
	Pubbl/distr/stampa	Cham : Springer Intern. Publ., 2014
	ISBN	9783319022734 (ebook)
	Descrizione fisica	1 online resource (viii, 237 p.)
	Collana	Lecture Notes in Mathematics, 1617-9692 ; 2097
	Classificazione	AMS 35L45 AMS 35L40 AMS 35L55
	Altri autori (Enti)	SpringerLink (Online service)
	Disciplina	515.353
	Soggetti	Differential equations, partial Mathematical physics
	Lingua di pubblicazione	Inglese
	Formato	Software
	Livello bibliografico	Monografia
	Nota di contenuto	Introduction ; Necessary conditions for strong hyperbolicity ; Two by two systems with two independent variables ; Systems with nondegenerate characteristics ; Index
	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