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	Nota di contenuto	Part I Spectral Data. -- Introduction. -- Minimal Immersions into the 3-Sphere and the Sinh-Gordon Equation. -- Spectral Data for Simply Periodic Solutions of the Sinh-Gordon Equation. -- Part II The Asymptotic Behavior of the Spectral Data. -- The Vacuum Solution. -- The Basic Asymptotic of the Monodromy. -- Basic Behavior of the Spectral Data. -- The Fourier Asymptotic of the Monodromy. -- The Consequences of the Fourier Asymptotic for the Spectral Data. -- Part III The Inverse Problem for the Monodromy. -- Asymptotic Spaces of Holomorphic Functions. -- Interpolating Holomorphic Functions. -- Final Description of the Asymptotic of the Monodromy. -- Non-special Divisors and the Inverse Problem for the Monodromy. -- Part IV The Inverse Problem for Periodic Potentials (Cauchy Data). -- Divisors of Finite Type. -- Darboux Coordinates for the Space of Potentials. -- The Inverse Problem for Cauchy Data Along the Real Line. -- Part V The Jacobi Variety of the Spectral Curve. -- Estimate of Certain Integrals. -- Asymptotic Behavior of 1-Forms on the Spectral Curve. -- Construction

of the Jacobi Variety for the Spectral Curve. -- The Jacobi Variety and Translations of the Potential. -- Asymptotics of Spectral Data for Potentials on a Horizontal Strip. -- Perspectives

Sommario/riassunto	This book develops a spectral theory for the integrable system of 2-dimensional, simply periodic, complex-valued solutions u of the sinh-Gordon equation. Such solutions (if real-valued) correspond to certain constant mean curvature surfaces in Euclidean 3-space. Spectral data for such solutions are defined (following ideas of Hitchin and Bobenko) and the space of spectral data is described by an asymptotic characterization. Using methods of asymptotic estimates, the inverse problem for the spectral data is solved along a line, i.e. the solution u is reconstructed on a line from the spectral data. Finally, a Jacobi variety and Abel map for the spectral curve are constructed and used to describe the change of the spectral data under translation of the solution u. The book's primary audience will be research mathematicians interested in the theory of infinite-dimensional integrable systems, or in the geometry of constant mean curvature surfaces