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حول السلتون في نموذج كايرل الرئيسي

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Abstract : The Chiral equation is a non-linear differential equation for two anti-Hermitian matrix valued functions A and B on two dimensional Lorentz space-time $\Bbb R^{1,1}.$ If ξ and η are light cone coordinates on $\Bbb R^{1,1},$ then the Chiral equation is $$2A_\eta=AB-BA \text{and} \ 2B_\xi=BA-AB.$$ It is developed as a generalization to an indefinite metric of harmonic maps into a unitary group. Roughly speaking, the solutions to the Chiral equation can be split into two components: the non-dispersive or `soliton component, and the dispersive component. Solitons are generated by meromorphic unitary loops, and these are examined by two Grassmannians, one to prove a decomposition into simple pole factors, and the other to give a geometric picture of the time-space evolution of solitons. In this thesis we discuss the theory of solitons in the principal Chiral equation. In Chapters 2 and 3, Morse functions are used to describe the behaviour of the solitons. In Chapter 4, much attention is paid to the study of generalised the idea of Hopf algebra for solitons

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