

1079-35-316

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Lax pairs are a well-established tool for the study of in-stationary nonlinear PDE's. Given a pair of linear operators acting on a certain Hilbert space we will say that they form a Lax pair for an in-stationary nonlinear PDE if that PDE arises as a compatibility condition between the two given operators. Since Lax pairs are closely linked to spectral decompositions they are no easily obtainable in the context of Dirac operators due to the non-commutativity of the underlying algebraic structure. In this talk we construct Lax pairs using the Dirac operator in the context of Clifford analysis. We hope to demonstrate that it is possible to obtain Lax pairs for linear differential operators with polynomially generalized Dirac operators and also give an example for a non-linear PDE. The main idea here is to substitute the classic approach by the so-called AKNS method. (Received January 17, 2012)