Investigations of local dynamics underlying discrete breathers

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Discrete breathers (DBs) are self-localized (in terms of energy) periodic phenomena in discrete networks of nonlinear oscillators. Existence of DBs is shown in a few of works by S. Aubry, R. MacKay and other collaborators in the 1990's. All of the proofs of existence DBs rely on the use of the Implicit Functuion Theorem using the anti-integrability approach. While this method is effective, it does not exactly say anything about what "really" happens, i.e. what are the causes of such an effect and how it should behave under perturbations. I wonder if this can be answered by studying local dynamics of the network. I present some numerical evidence leading to conjectures that might answer this question.