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Sommario/riassunto	This thesis is a contribution at the intersection of a number of active fields in theoretical and experimental condensed matter, particularly those concerned with disordered systems, integrable models, lattice gauge theories, and non-equilibrium quantum dynamics. It contributes an important new facet to our understanding of relaxation in isolated quantum systems by conclusively demonstrating localization without disorder for the first time, answering a long-standing question in this field. This is achieved by introducing a family of models – intimately related to paradigmatic condensed matter models – and studying their non-equilibrium dynamics through a combination of exact analytical mappings and an array of numerical techniques. This thesis also makes contributions relevant to the theory of quantum chaotic behaviour by calculating novel, and often intractable, entanglement measures and out-of-time-ordered correlators. A concrete and feasible proposal is also made for the experimental realization and dynamical study of the family of models, based on currently available technologies.