



Istituto Nazionale di Fisica Nucleare

Bologna Workshop on:

## CFT AND INTEGRABLE MODELS

and their applications from gauge/gravity dualities to statistical mechanics and quantum information



Contribution ID: 87

Type: **Talk (20 min)**

## Hidden strong symmetries in a range 3 deformation of the Hubbard model

*Monday, 4 September 2023 11:40 (20 minutes)*

We consider a spin chain corresponding to an open quantum system described by the Lindblad equation, where the external driving acts in the bulk. This model corresponds to a new integrable range 3 elliptic deformation of Hubbard. We show the appearance of multipleNESS: the system retains memory of the initial state, even though the obvious symmetries of the Hamiltonian are broken. We motivate this by the existence of hidden strong symmetries in the form of quasi-local operators. Furthermore, we comment on the existence of the Liouville gap, related to the relaxation time.

Based on the works 2301.01612 and 2305.01922 with M. de Leeuw, B. Pozsgay and E. Vernier.

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**Session Classification:** Bologna Workshop CFT-IM