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**Robust entangled states in a non-hermitian periodically driven two-band Bose-Hubbard Hamiltonian**[1] CARLOS ALBERTO PARRA MURILLO, MANUEL HUMBERTO MUOZ ARIAS, JAVIER MADROERO, Universidad del Valle, SANDRO WIMBERGER, Universit degli Studi di Parma, Heidelberg University — The steady state properties of a many-body Wannier-Stark system coupled to an effective reservoir is studied within the non-Hermitian approach in the presence of periodic time-dependent driving. We show how the interplay between dissipation and shaking dynamics reveals a hidden symmetries yielding the occurrence of a (quasi-) loss- and interaction-free subspace. We numerically probe the geometric structure of the asymptotic state and its robustness to imperfections in the preparation of the initial conditions, dissipation and the size of system.

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