Abstract Submitted
for the SES21 Meeting of
The American Physical Society

Properties of many-boson systems with random interactions[1] CHARLES WHITE, ALEXANDER VOLYA, Florida State University — The dynamics of quantum many-body systems is of paramount importance in many branches of science. The emergence of mean fields, the formation of effective degrees of freedom, and the appearance of dynamical symmetries are typically generic results of two-body interactions. While fermionic systems driven by random two-body interactions have been extensively studied in the past, bosonic systems are less understood. In this work, we study systems of bosons driven by random two-body interactions. We find that there are some statistical and collective limits that resemble the corresponding fermionic cases, however we also find that many-boson structures are significantly shaped by condensation and clusterization, which would be blocked by the Pauli principle for fermions. We present numerical studies and explore special analytic limits to support our findings.

[1]U.S. Department of Energy Office of Science , Office of Nuclear Physics under Grant No. DE-SC0009883

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Date submitted: 07 Sep 2021 Electronic form version 1.4