

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

## COMPACTNESS OF INSTANTONS AND THE ATIYAH-FLOER CONJECTURE

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Zoom link:

<https://bostonu.zoom.us/j/97456419902?pwd=Vk5hdGQ0dlgwTXZkZ1hRUHM0WndqZz09>

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**Abstract:** The Atiyah-Floer conjecture says that the instanton Floer homology of a three-manifold (constructed via gauge theory) agrees with a Lagrangian Floer homology (constructed via symplectic geometry) associated to a splitting of the manifold. Atiyah's heuristic argument of this conjecture relies on a compactness result for instantons in a certain adiabatic limit. I will present a proof of such a compact theorem for the case when the gauge group is  $SO(3)$ , as well as another compactness theorem related to bounding chains on the symplectic side.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin ([yslin@bu.edu](mailto:yslin@bu.edu)) or Siu-Cheong Lau ([lau@math.bu.edu](mailto:lau@math.bu.edu)) for more information.