

Physics Seminar: Csaba Csaki
Thursday, April 3 · 2:00 – 3:00pm

Location: 313

Title: Lessons from the Seiberg-Witten axion

Abstract: The photon-axion coupling is our main experimental tool for axion searches. Since it is generated by the anomaly, it is usually expected to be quantized and its magnitude to be well constrained. However some of these arguments seem to be invalidated by the presence of magnetic monopoles charged under the PQ symmetries. We try to clarify these issues by examining a toy example based on the SU(2) Seiberg-Witten theory where all of these ingredients appear automatically. We determine the effect of the magnetic monopole (or equivalently those of strongly coupled instantons) on the axion coupling and comment on the duality of the Maxwell equations for axion electrodynamics.