

# Lightning Research Talk

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# Research Description

- ▶ Instanton Floer theory and applications to low dimensional topology.
- ▶ Topics I am thinking about:
  1. Relating instanton floer theory of knots and 3-manifolds.
  2. Computing knot instanton homology from their sutured counterparts.
  3. Better understand the structure of knot instanton floer groups, e.g. an intrinsic definition of Alexander grading.
  4. Find analogues of results from  $SU(2)$  instanton floer theory for  $SU(n)$ .

$$\begin{array}{ccc} I_{\omega_n}^{\#}(Y_n) & \xrightarrow{\quad\quad\quad} & I_{\omega_{n+2}}^{\#}(Y_{n+2}) \\ & \nwarrow \quad \quad \nearrow & \\ & I_{\omega}^{\#}(Y, K) & \end{array}$$

Figure: [B., in progress]