

## **abstract**

SPECIAL MATHEMATICAL PHYSICS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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The theory of Hitchin systems and their moduli spaces of solutions has important connections to  $N=2$  gauge theory in four dimensions. Exploring this connection, we have conjectured the existence of certain integral invariants which encode the hyperkahler metric on the moduli spaces, and satisfy a wall-crossing formula akin to the one identified by Kontsevich and Soibelman for motivic Donaldson-Thomas invariants. We have computed such invariants for  $SU(2)$  Hitchin systems. The talk will review these results, starting from the definition of the invariants in Hitchin systems, and then exploring the relation to four dimension gauge theories and its consequences.