

## **abstract**

Joint IAS-PU Symplectic Geometry Seminar  
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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The question of what conditions guarantee that a symplectic circle action is Hamiltonian has been studied for many years. In 1998, Sue Tolman and Jonathon Weitsman proved that if the action is semifree and has a non-empty set of isolated fixed points then the action is Hamiltonian. In 2010, Cho, Hwang, and Suh proved in the 6-dimensional case that if we have  $b_2^+=1$  at a reduced space at a regular level  $\lambda$  of the circle valued moment map, then the action is Hamiltonian. In this talk, we will discuss using their result to prove that certain 6-dimensional symplectic actions which are not semifree and have a non-empty set of isolated fixed points are Hamiltonian. In this case, the reduced spaces are 4-dimensional symplectic orbifolds, and we will discuss resolving the orbifold singularities and using J-holomorphic curve techniques on the resolutions.