

Yael Karshon, University of Toronto and The Hebrew University of Jerusalem
Blow-ups of $\mathbb{C}\mathbb{P}^2$ without torus actions

Compact symplectic 4-manifolds which admit Hamiltonian torus actions must be blowups of $\mathbb{C}\mathbb{P}^2$ or of $S^2 \times S^2$. We show that the converse is false: we prove, using holomorphic machinery, that certain blow-ups of $\mathbb{C}\mathbb{P}^2$ do not admit torus actions or even circle actions.

This is joint work with Liat Kessler.