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Moduli Spaces of Sheaves on Kodaira Surfaces

Moduli spaces of stable sheaves on Kodaira surfaces are examples of compact holomorphic symplectic manifolds. The only other known examples of non-Kähler holomorphic symplectic manifolds are Bogomolov-Guan manifolds or Douady spaces of points on Kodaira surfaces. In this talk we show that there exist compact moduli spaces in each even dimension, and that in the rank-2 case they are non-Kähler but not deformation equivalent to Bogomolov-Guan manifolds. We also discuss some steps toward determining if these moduli spaces are deformation equivalent to Douady spaces of points on Kodaira surfaces.