

Title: Symplectic Singularities

Abstract: This four hour course provides an introduction to symplectic singularities. The following subjects will be covered: Symplectic linear algebra and symplectic varieties. Symplectic singularities and symplectic resolutions. The semismallness theorem of Kaledin and Namikawa. Quotient singularities and the theorems of Kaledin and Verbitsky. Hilbert scheme techniques. The work of Fu on the resolution of orbit closures. Singular symplectic moduli spaces of sheaves on K3 surfaces.