

**ALGEBRAIC REPRESENTATIVES AND  
INTERMEDIATE JACOBIANS OVER PERFECT  
FIELDS**

**Speaker:** Sebastian Casalaina-Martin (CU-Boulder), March 21, 2018

**Abstract:** Intermediate Jacobians and Abel-Jacobi maps provide a powerful tool for the study of complex projective manifolds. In positive characteristic, over algebraically closed fields, algebraic representatives and regular homomorphisms provide a replacement for the intermediate Jacobian and Abel–Jacobi map. I will discuss recent progress, with Jeff Achter and Charles Vial, extending this theory to the case of perfect fields, as well as some applications to a question of Barry Mazur on weight one Galois representations arising from geometry, and to integral decompositions of the diagonal.