

**Speaker:** Keiichi Watanabe, Nihon University, Tokyo, Japan

**Title:** F-singularities — applications of characteristic  $p$  methods to singularity theory

**Abstract:** We introduce the notions of F-regular, F-rational, F-pure rings defined by characteristic  $p$  methods using tight closure and Frobenius splitting, and explain how these concepts are related to log terminal, rational, log canonical singularities which play important roles in MMP (Minimal Model Program) in algebraic geometry over fields of characteristic 0 using “reduction mod  $p$ ” technique.