

1150-14-432

Fumiaki Suzuki* (fsuzuk2@uic.edu). *Birational superrigidity and K-stability of projectively normal Fano manifolds of index one.*

Birational superrigidity and K-stability of Fano manifolds are two important notions with different backgrounds. The notion of birational superrigidity is motivated by the rationality problem of Fano manifolds; the notion of K-stability is motivated by the existence of Kähler-Einstein metric on Fano manifolds. Birational superrigidity and K-stability are unexpectedly related, and it is conjectured that every birationally superrigid Fano manifold is K-stable. Both the notions were intensively studied in the case of smooth Fano complete intersections of index one: birational superrigidity by Iskovskih-Manin, Pukhlikov, Cheltsov, de Fernex-Ein-Mustața, de Fernex, Suzuki, and Zhuang, and K-stability by Fujita and Zhuang. Among them, Zhuang proved that every smooth Fano complete intersection of index one and small codimension is birationally superrigid and K-stable. In this talk, we replace the complete intersection assumption of Zhuang's theorem by the projective normality. In particular, we prove that every projectively normal Fano manifold in \mathbb{P}^{n+r} of index one, codimension r , and dimension $n \geq 10r$ is birationally superrigid and K-stable. (Received July 14, 2019)