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**Chi Li\*** ([chi.li@rutgers.edu](mailto:chi.li@rutgers.edu)). *Weighted Kähler-Ricci solitons and application.*

On Fano varieties admitting torus actions, weighted Kähler-Ricci solitons are special Kähler metrics that generalize Kähler-Ricci solitons and in particular Kähler-Einstein metrics. Recently Apostolov-Calderbank-Jubert-Lahdili discovered an interesting connection between Sasaki-Einstein metrics and a particular class of weighted Kähler-Ricci solitons. We will talk about the joint work with Jiyuan Han on the Yau-Tian-Donaldson conjecture for weighted Kähler-Ricci solitons and its application to Sasaki-Einstein metrics. (Received August 17, 2021)