Abstract:

Shrinking gradient Ricci solitons (shrinkers) are models for the local geometry of singular regions of solutions to the Ricci flow and their classification is critical to the understanding of singularity formation under the flow. Growing evidence suggests that the asymptotic geometry of complete noncompact shrinkers may be particularly constrained; in fact, all examples currently known which do not split locally as products are smoothly asymptotic to a regular cone at infinity. I will present some results from a joint project with Lu Wang, in which we study the uniqueness of shrinkers asymptotic to such structures as a problem of parabolic unique continuation, and discuss the applications of these results to a conjectured classification in four dimensions.