

Hardy inequalities via Riccati pairs on Finsler manifolds

Sándor Kajántó¹

¹ Babeş-Bolyai University, Cluj-Napoca, Romania

We investigate the extendibility of the recent approach of *Riccati pairs* provided by Kajántó, Kristály, Peter and Zhao [*Math. Ann.*, 2024] for establishing Hardy-type inequalities on non-compact Riemannian manifolds to Finsler manifolds. Besides the flag curvature, the *reversibility* and the *S-curvature* play crucial role in our discussion, producing the formal differences between Finslerian Hardy inequalities and their Riemannian counterparts. The transplantation of the required arguments also necessitates additional workarounds due to the specificities of Finsler geometry. As applications, we obtain natural Finslerian extensions of numerous well-known Euclidean/Riemannian inequalities. Some typical Finslerian applications are also discussed.