Schur theorem for the Ricci curvature of Finsler metrics

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We will start by commenting on what is known about the problem of proving or disproving the Schur theorem for the Ricci curvature of (pseudo-)Finsler metrics. Then, for any (y-global, positive definite) Finsler metric F that is Einstein, namely with $\mathrm{Ric}(x,y) = \rho(x)\,F(x,y)^2$, we will prove that $\mathrm{d}\rho$ is the integral on each indicatrix of an expression depending on the mean Landsberg tensor. As a corollary, the Schur theorem holds true when the metric is weakly Landsberg. The proof is based on the $\mathrm{Diff}(M)$-invariance of certain functionals, inspired by Finslerian gravity theories.

References

Fidel F. Villaseñor, Schur theorem for the Ricci curvature of any weakly Landsberg Finsler metric. Accepted in *Israel J. Math.*
(preprint: https://arxiv.org/abs/2304.08933), 2023.