Radius and concurrent vector fields
in spray and Finsler geometry

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Abstract. I recall the definitions of a concurrent vector field and (from Whitehead [11]) a radius vector field, and extend them so as to apply in spray and Finsler geometry. I discuss the role of radius vector fields in the theory of projective connections. I show that a concurrent vector field on a Finsler space is necessarily a radius vector field, and that if a connected manifold equipped with a spray supports a complete radius vector field which has a zero, then the manifold is diffeomorphic to $\mathbb{R}^n$ with the standard flat spray.

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