

Conformal, projective, and Weyl geometries

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Abstract

Mostly, this talk will be a review of known constructions and especially the links between them. The formulae governing conformal and projective differential geometry already reveal striking similarities, really just the tip of the iceberg. Both geometries also exhibit some intriguing patterns of invariant differential operators, some of which can be used to formulate and sometimes answer questions on the existence of preferred metrics or connections. A specific question along these lines concerns the Weyl metrisability of projective structures and, if time permits, I'll provide some answers obtained in recent joint work with Omid Makhmali. But I'll start from scratch so I might not get that far.