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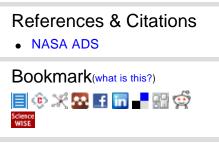
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## Transitive conformal holonomy groups

## Jesse Alt

(Submitted on 4 Jul 2011)

For (M,[g]) a conformal manifold of signature (p,q) and dimension at least three, the conformal holonomy group  $\operatorname{Mathrm}(Hol)(M,[g])$  subset O (p+1,q+1) is an invariant induced by the canonical Cartan geometry of (M, [g]). We give a description of all possible connected conformal holonomy groups which act transitively on the M\"obius sphere  $S^{p,q}$ , the homogeneous model space for conformal structures of signature (p,q). The main part of this description is a list of all such groups which also act irreducibly on  $R^{p+1,q+1}$ . For the rest, we show that they must be compact and act decomposably on  $R^{q+1,q+1}$ , in particular, by known facts about conformal holonomy the conformal class [g] must contain a metric which is locally isometric to a so-called special Einstein product.

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