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Conformal transformation, conformal change, and conformal covariants. (English)

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[For the entire collection see [Zbl 0672.00006](#).]

The author studies differential operators covariant under conformal changes of metrics on Riemannian or pseudo-Riemannian manifolds of various dimensions with particular emphasis for dimension 4. These operators (called covariants of conformal change) can be constructed on a Riemannian S^4 and a Lorentzian $S^1 \times S^3$ but there are problems with generalizing them to covariants on general manifolds. Dimension 4 is exceptional since there a non-existence theorem holds: there is no properly fourth-order covariant of conformal change acting on 1-forms in Riemannian or pseudo-Riemannian 4-manifolds.

Reviewer: [L.Sokolowski](#)

MSC:

[53B20](#) Local Riemannian geometry

[53B30](#) Local differential geometry of Lorentz metrics, indefinite metrics

[53B50](#) Applications of local differential geometry to the sciences

Cited in **3** Documents

Keywords:

[conformal invariance](#); [differential operators](#); [conformal changes](#); [covariants](#)