



# CONFORMAL FEDOSOV STRUCTURE IN SYMMETRIC AND RECURRENT (PSEUDO-)RIEMANNIAN SPACES

PATRIK PEŠKA, JOSEF MIKEŠ and CHAKIBEK ALMAZBEKOV

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In this article we prove that symmetric and recurrent pseudo-Riemannian manifolds with non-constant curvature do not admit conformal Fedosov structures. The non-existence result extends also to pseudo-Riemannian manifolds of non-constant curvature whose Riemann curvature tensor possesses a special form resembling that of constant curvature. As a typical example, Kagan subprojective spaces fall into this class.

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## 1. Introduction

In this paper, we study symmetric and recurrent (pseudo-)Riemannian manifolds equipped with conformal Fedosov structures. We prove that, apart from spaces of constant curvature, (pseudo-)Riemannian manifolds do not admit such structures. In particular, this non-existence result also applies to pseudo-Riemannian spaces whose curvature tensor has the form (6).

## 2. Conformal Fedosov Spaces

For a *conformally symplectic* manifold [12], one considers a local equivalence class of symplectic forms defined up to multiplication by a nonzero scalar. This framework provides a natural bridge between projective differential geometry and the theory of Fedosov manifolds, giving rise to the notion of a *conformally Fedosov manifold*.