ON THE SPECTRUM OF THE ONE-DIMENSIONAL CURVATURE OPERATOR OF NON-REDUCTIVE HOMOGENEOUS PSEUDO-RIEMANNIAN 4-MANIFOLDS

OLESYA KHROMOVA

The eigenvalues of the Ricci curvature operator of locally homogeneous 3-manifolds were investigated in [1, 2]. Similar results for 4-dimensional non-reductive homogeneous pseudo-Riemannian manifolds were obtained in [3].

One-dimensional curvature operator is defined by

$$\mathcal{A} = \frac{1}{n-2}\left(Ric - \frac{s}{2(n-1)}\mathrm{Id}\right),$$

where Ric, Id, and s denote respectively the Ricci operator, the identity operator, and the scalar curvature of n-dimensional Riemannian manifolds.

The spectrum of the one-dimensional curvature operator of 3-dimensional metric Lie groups studied in [4, 5]. In this paper we investigate the spectrum of the one-dimensional curvature operator of non-reductive homogeneous pseudo-Riemannian 4-manifolds.

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Olesya Pavlovna Khromova
Altai State University,
61 Lenin avenue,
656049, Barnaul, Russia
E-mail address: khromova.olesya@gmail.com

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