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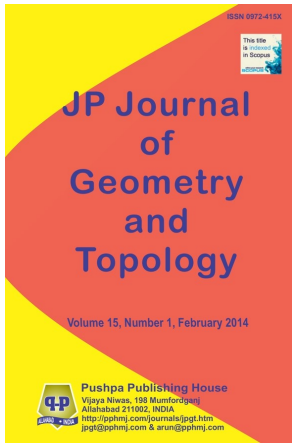

DUAL REPRESENTATION OF THE CURVATURE IN A HILBERT SPACE: CURVATURE AND INTEGRAL TRANSFORMS

Francisco Bulnes

Abstract

Integral geometry methods are used to define the curvature through integrals or integral transforms in a Radon transform version. Likewise, using their properties on homogeneous spaces $M = G/H$, with G, a non-compact Lie group and H, a compact group, and its dual representation of the curvature in a Hilbert space with measures in the space, $\mathcal{L}^2(H(\Omega^2(M)))$ are obtained analytic and harmonic representations of curvature to n-dimensional curved spaces. These curvature models correspond to spectral versions of curvature whose physics reinterpretation is the curvature energy accumulated in the space (for the matter presence or field direction variations) and detected by possible instruments in studies that detect and measure the curvature energy. Curvature is obtained by integral transforms in several cases.

Keywords and phrases:
curvature, curvature dual representation, integrals of curvature, curvature in Hilbert spaces, curvature in homogeneous spaces, smooth embedding, curvature

- Volume 19 (2016)
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- Volume 14 (2013)
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- Volume 11 (2011)
- Volume 10 (2010)
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integral transforms.

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