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Spherical distributions on harmonic extensions of pseudo-H-type groups

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Abstract. In the articles "Ciatti, P., Scalar products on Clifford modules and pseudo-H-type Lie algebras, Ann. Mat. Pura Appl., to appear" and "Ciatti, P., Solvable extensions of pseudo-H-type algebras, Boll. Un. Mat. It., to appear," a class of solvable pseudo-Riemannian harmonic manifolds was constructed. Now spherical distributions on such manifolds are investigated. A notion of radiality for distributions is introduced with the aid of a technique due to J. Faraut (Faraut, J., Distributions sphérique sur les espaces hyperboliques, J. Math. Pures Appl., (1979), 369–444). The spherical distributions are the radial eigendistributions of the Laplace-Beltrami operator. They span a space which, depending on the signature of the metric, may have dimension one or two.

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