SINGULAR INTEGRALS AND HARDY TYPE SPACES FOR THE INVERSE GAUSS MEASURE

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Let γ_{-1} be the absolutely continuous measure on $\mathbb{R}^n$ whose density is the reciprocal of a Gaussian and consider the weighted Laplacian $\mathcal{A}$ which is self-adjoint on $L^2(\gamma_{-1})$. This operator may be seen as a restriction of the Laplace–Beltrami operator on a warped-product manifold whose Ricci tensor is unbounded from below. In this talk, I will present boundedness and unboundedness results for the purely imaginary powers and the first order Riesz transforms associated with the operators $\mathcal{A} + \lambda I$, $\lambda \geq 0$, from some new Hardy-type spaces adapted to γ_{-1} to $L^1(\gamma_{-1})$.