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Summary: We consider the horospherical transform and its inversion in 3 examples of hyperboloids. We want to illustrate via these examples the fact that the horospherical inversion formulas can be directly extracted from the classical Radon inversion formula. In a more broad context, this possibility reflects the fact that the harmonic analysis on symmetric spaces (Riemannian as well as pseudo-Riemannian ones) is equivalent (homologous), up to the abelian Fourier transform, to the similar problem in the flat model. On the technical level it is important that we work not with the usual horospherical transform, but with its Cauchy modification.

MSC:
32A45 Hyperfunctions
33C55 Spherical harmonics
43A75 Harmonic analysis on specific compact groups
44A12 Radon transform

Keywords:
pseudo-hyperbolic spaces; hyperboloids; horospheres; horospherical transform; horospherical Cauchy transform

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References:

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