THE RADON TRANSFORM INTERTWINES WAVELETS AND SHEARLETS

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Abstract. We show that the shearlet coefficients can be computed by means of three classical transforms: the affine Radon transform, a 1D wavelet transform and a 1D convolution. This yields formulas that open new perspectives both for finding a new algorithm to compute shearlet coefficients and for the inversion of the Radon transform. Furthermore, the strong connection between shearlets and wavelets suggests an alternative proof of the wavefront set resolution properties of the shearlet transform.

References


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