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**Boris Rubin\*** ([borisr@math.lsu.edu](mailto:borisr@math.lsu.edu)), Louisiana State University, Department of Mathematics, 303 Lockett Hall, Baton Rouge, LA 70803. *Funk, Cosine, and Sine Transforms on Stiefel and Grassmann Manifolds. The Fourier Transform Approach.*

The Funk, cosine, and sine transforms on the unit sphere are indispensable tools in integral geometry and interesting objects of harmonic analysis. Using the classical Fourier techniques we extend basic facts about these transforms to the more general context for Stiefel or Grassmann manifolds. The main topics are composition formulas, the Fourier functional relations for homogeneous distributions, analytic continuation, inversion formulas. (Received September 11, 2011)