Probabilistic Moment Problem with Applications

Robert Mnatsakanov

Abstract
The problem of recovering functions given incomplete information contained in the sequence of their moments or the scaled values of Laplace transforms represents the special case of the ill-posed problem. Several approximations and corresponding upper bounds for the uniform and L_1-rates of approximations are derived. Applications in computed tomography and statistics including the problem of recovering the derivatives, regression function, and the support of functions will be outlined. Reconstruction of a function from the values of its Radon transform (projections) will be discussed as well.