New Deconvolution Methods for Well Test and Production Data Analysis

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Abstract

The deconvolution method has received much attention recently, and is becoming one of the major tools for well test and production data analysis. Here, we present several new deconvolution algorithms, which we believe that are relevant and can be an important addition to the existing efforts made in this field. We show that the solution of the deconvolution problem can be successfully represented as a linear combination of exponential basis functions. We present three deconvolution algorithms. The first two algorithms are based on regularization concepts borrowed from the well-known Tikhonov and Krylov methods, while the third algorithm is based on the stochastic Monte Carlo method.

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