Upscaling of Reservoir Properties

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Abstract

This work describes a method of scaling up reservoir properties based on similarity of transport phenomena equations. The properties are porosity, permeability, formation resistivity factor, specific heat capacity and thermal conductivity. For each property, equivalent electrical circuits are constructed and a system of linear equations is obtained. Due to the sparce nature of the matrix of system conjugate gradient method is used as one of the fastest. Results for scaling up reservoir properties have been obtained for different sets of data (experimental and artificial). Experimental and model-by-model ways of validation of the proposed model have been described and is a subject of the future work.

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