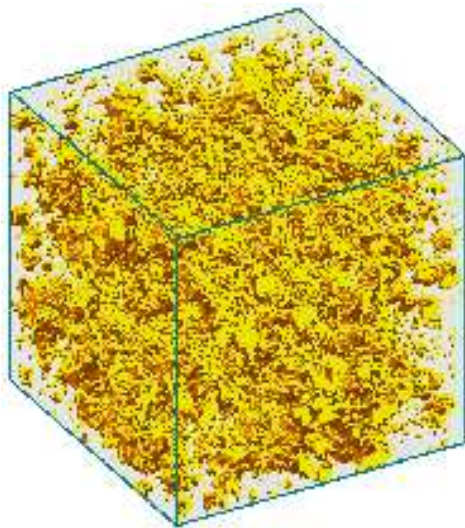# Modeling Random Heterogeneous Materials Via Lower-Order Statistics

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We apply our (re)construction algorithm to generate 3D digitized realizations of a Fontainebleau sandstone and a boron-carbide/aluminum composite from 2D tomographic images. We conclude that reconstructions using standard 2-point correlation functions only work well for single-scale structures. However, we show that additional clustering information is required to accurately model multiscale random media. Moreover, we construct realizations of hypothetical materials with desired structural characteristics obtained by manipulating their two-point correlation functions.

3D Sandstone Reconstruction