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Dimitris Kontogiannis* (dkontog@iastate.edu). *Homogenization of partial differential equations in random environments.*

I will present recent work on the modeling and analysis of random network structures with the use of percolation theory. Such structures model physiological microvascular networks, sea ice structures, etc. The goal of this work is to develop the mathematical tools that lead to the homogenization of partial differential equations in such environments. (Received February 15, 2010)