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Nicholas M. Ercolani*, Department of Mathematics, Building # 89, University of Arizona,
Tucson, AZ. *Random Partitions in Statistical Mechanics*.

We will introduce and describe a family of distributions on spatial random partitions that serve to connect a variety of statistical mechanical models of interest including the ideal Bose gas, the zero range process, particle clustering and spatial permutations. Our results focus on the distribution of the size of the largest "component" in such models. For this introductory talk we will focus on results, including new results, related to fluctuations around the equilibrium state for the ideal Bose gas. This is joint work with Sabine Jansen and Daniel Ueltschi. (Received February 11, 2014)