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Elizabeth Perez Reilly* (reilly@ams.jhu.edu), The Johns Hopkins University, 3400 North Charles Street, Whitehead Hall, Baltimore, MD 21218, and **Edward R. Scheinerman**. *Random Difference Graphs and Their Properties*.

Difference graphs are graphs such that a threshold, $t \in \mathbb{R}$, and vertex weights $x_1, x_2, \dots, x_n \in \mathbb{R}$ exist such that $ij \in E(G) \iff |x_i - x_j| > t$, that is, the weights of i and j are sufficiently far apart. Two equivalent random difference graph models will be developed, one based on the given definition and the other based on the idea of creation sequences for colored difference graphs. Creation sequences will then be used to show some interesting properties of these random difference graphs, such as the probability of sampling a Hamiltonian difference graph or one with a perfect matching. (Received September 10, 2008)