

## **Graphic Approximation of Integer Sequences**

Brian Cloteaux, National Institute of Standards and Technology

For a sequence of non-negative integers, we say that the sequence is graphic if there exists a graph whose nodes have degrees (or, number of adjacent edges) that correspond to the sequence. We examine a problem that comes from the generation of random graphic sequences, how to handle when a non-graphic sequence is generated. We give two new approaches for determining a graphic approximation of the sequence from a non-graphic sequence. A graphic approximation is a sequence that is graphic and also near to the original sequence under some distance measure. These new schemes for this problem are fast, simple to implement, and only require a linear amount of memory.

Keywords: degree sequence, graphic approximation