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Erica Flapan, Kenji Kozai* (kozai@rose-hulman.edu) and **Ryo Nikkuni**. *Random linear embeddings of spatial graphs and configurations of Mobius ladders.*

Random knots have been investigated extensively to model knotting behavior of linear polymers like DNA. Generalizations into random embeddings of graphs can be thought of as models for the spatial configuration of non-linear molecules, polymers, and substructures. For a given graph, one might ask which configurations are typical. Leveraging known and new results about random knotting and linear embeddings of graphs, we show that certain "simple" graphs, including the 3-rung Mobius ladder, nearly always show up in their topologically simplest configurations. (Received February 20, 2018)