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Connecting partitions to knot diagrams via African and Indian art. Preliminary report.

There are interesting connections in the literature between knot theory and q -hypergeometric series, which are closely related to integer partitions. Inspired by these connections, in our study we use combinatorial algorithms from world folk art such as African *sona* and South Indian *kolam* to turn the Ferrers diagrams of integer partitions into knot diagrams of a canonical type. We find that certain primary features of partitions map to prominent aspects of knots; moreover, the Jones polynomial of the knot associated to a partition takes a nice form related to the rank of the partition. Do classical bijections between partitions translate to interesting equivalences between knot diagrams, or do other patterns map between the partition-theoretic and knot-theoretic realms? (Received January 28, 2019)