1161-05-166 **Matthew Kahle** and **Elliot Paquette*** (elliot.paquette@gmail.com), , Canada, and **Erika Roldan**. *The threshold for simple–connectedness in hypercube percolation.*

We study the fundamental group of certain random 2-dimensional cubical complexes. We show a 2-dimensional generalization of a theorem of Burtin and Erdos-Spencer on the connectivity threshold for bond percolation. In the 2-dimensional setting, the natural analogue is a transition for the simple–connectivity of the space. This is in contrast to the 2-dimensional analogue of simplicial complexes, in which the natural analogue of the Erdos-Renyi theorem is the threshold for homological connectivity of the space (due to Linial–Meshulam). We also show that below the connectivity threshold, the fundamental group factors as a product of a finitely generated pieces, and that as the density parameter goes to 0, every finitely generated group appears. (Received August 16, 2020)