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Jessalyn Bolkema* (jessalyn.bolkema@huskers.unl.edu), **Katherine Morrison** and **Judy L. Walker**. *Structural Results on Factor Graphs of Polar Codes*.

Arikan's polar codes have been celebrated for their capacity-achieving performance since first presented in 2008. These codes are most often discussed from an information-theoretic point of view, but their algebraic properties are not as well understood. In this talk, we utilize factor graph realizations of polar codes as a framework to uncover underlying algebraic structures. We discuss graph-theoretic and algebraic properties of polar codes and explore the impact of these properties on code design and performance. (Received August 30, 2016)