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Matt Larson* (matthew.larson@yale.edu). *Power maps in finite groups.*

Motivated by algorithmic number theory, Pomerance and Shparlinski have obtained results on the number of cycles in the functional graph of the map $x \mapsto x^a$ in \mathbb{F}_p^* . We prove similar results for other families of finite groups. We also show that the cyclic group of order n minimizes the number of cycles among all nilpotent groups of order n . (Received September 16, 2017)