Simulation classes and aperiodicity

John Nicholson (nichoj6@mcmaster.ca) McMaster University

I will describe a framework for classifying the computational power of a finite algebra via a construction known as a simulation class, originally studied by VanderWerf. This perspective connects naturally with tame congruence theory, and I will highlight several simulation classes that admit clean characterizations in those terms. The focus of the talk will be the aperiodic simulation class, the class of all finite algebras that cannot simulate any finite group. I will conclude with recent joint work with my supervisor, Matt Valeriote, towards a description of this class.