# $H$-avoiding Hamiltonian Cycles

Michael Ferrara, Angela Harris, Michael Jacobson
The University of Colorado at Denver

A spanning cycle in a graph $G$ is called a *hamiltonian cycle*, and if such a cycle exists $G$ is said to be *hamiltonian*. Let $H$ be any subgraph of $G$. If there is a hamiltonian cycle $C$ in $G$ such that $E(C) \cap E(H) = \emptyset$ (alternatively, if $G - E(H)$ is hamiltonian) then we will call $C$ an *$H$-avoiding hamiltonian cycle* and we say that $G$ is *$H$-avoiding hamiltonian*. In this talk, we will give conditions that assure $G$ is $H$-avoiding hamiltonian for various choices of $H$. In particular, we will consider the case where $H$ is an edge-disjoint family of hamiltonian cycles or an edge-disjoint family of perfect matchings.