Hamiltonian Cycles in \( S_t(C_n \times C_m) \)

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Let \( C_n \times C_m \) be the Cartesian product of two directed cycles \( C_n \) and \( C_m \). We form a new directed graph by modifying the directed edges of one of the \( m \)-cycles. There is a new directed edge from a vertex to another that were originally at a distance \( t \) apart, where \( 1 \leq t < m \). The original edges of the \( m \)-cycles are deleted. In this talk we present some sufficient conditions on when \( S_t(C_n \times C_m) \) is hamiltonian.

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