Williams' conjecture holds for meteor graphs

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Shifts of finite type (SFTs) are central objects in dynamical systems, but they can also be modeled by graph or Cuntz-Krieger C*-algebras. Williams established in 1976 that two SFTs are conjugate (isomorphic) iff they are strong shift equivalent, iff the graph of one SFT can be converted into the other via in- and out-splitting and their inverses. He also introduced the simpler, and a priori weaker, condition of shift equivalence. Krieger later showed that shift equivalence of SFTs can be detected by the K-theory of the associated Cuntz-Krieger C*-algebras.
Although Williams originally claimed that shift equivalence and strong shift equivalence are the same, this statement is not true in general. Together with L. Cordeiro, D. Goncalves and R. Hazrat, we have found a new class of graphs -- meteor graphs -- for which shift equivalence and strong shift equivalence do in fact coincide. This talk will describe meteor graphs and sketch the proof of our result, which combines operator-algebraic, combinatorial, and monoid-theoretic ideas.

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