The graph reachability problem, the computational problem of deciding whether there is a path between two given vertices in a graph, is the canonical problem while studying computations with limited memory. Different variations of this problem characterize various important space bounded computations. Understanding the complexity of the reachability problem is a central concern of computational complexity theory.

In this talk I will present some recent progress we have made on certain central open questions on the complexity of the reachability problem. (Received March 05, 2013)