Abstract

Unipotent flows are well behaved dynamical systems. In particular, Marina Ratner has shown that the closure of every orbit for such a flow is of nice algebraic(or geometric) form. This is known as the Ratner Orbit Closure Theorem; the Ratner Measure Classification Theorem and the Ratner Equidistribution Theorem are closely related results. After presenting these imporatnt theorems and some of their Consequences, I would discuss the main ideas of the proof. I will present examples that illustrate the theorems, some of their applications, and the main ideas involved in the proof.