

## Characterizations of invariants on dynamical systems

In this talk, we will discuss invariant sets for flows on dynamical systems. We focus on limit sets, particularly omega-limit sets and attractors which are invariant on dynamical systems. We first will explain iterated function systems (shortly, IFS) and its applications. We also see the dynamics for the transversely holomorphic flows on 3-manifolds with a certain cohomology condition. We shall present a topological characterization of the omega-limit sets for analytic flows up to homeomorphisms. As a applications of the characterization, we describe a Lyapunov stability for the flows.