Kandidatexamensarbete i matematik, med inriktning mot Dynamiska system och Talteori (SA120X)

Vårens projektarbete i **Dynamiska System:** *Smooth flows on surfaces.*

It is well known that finding and writing solutions to a given differential equation in an explicit form is not only very difficult but, usually, impossible. At the beginning of the last century, Poincaré proposed a different approach to the study of differential equations: He suggested exploring the qualitative behavior of solutions instead of their precise formulas. This observation was at the beginning of the development of modern dynamics.

A fundamental question in dynamics is whether a system is structurally stable. Namely,

Do the essential properties of a system persist under small perturbations?

Motivated by this question, we will focus on tools and methods for proving one of the most fundamental theorems in low dimensional dynamics, stating that for flows on two dimensional manifolds almost all systems are stucturally stable. We will also focus on the construction of various systems which fail to be structurally stable.

Förutsättningar: Det rekommenderas att man har läst kursen Analysens grunder, SF1677.

Kontaktpersoner

För frågor angående inriktningen Dynamiska System, kontakta Liviana Palmisano (liviana at kth dot se)