CMUP
Centro de **Matemática**
Universidade do Porto

Dynamical Systems Seminar

Date. May 25, 14h30

Place. Room M031

Speaker. Pedro Teixeira (CMUP)

Title. Non-hyperbolic singularities and periodic orbits: what can be learned from the topological-dynamical approach?

Abstract. Non-hyperbolic singularities and periodic orbits are two phenomena that may display extremely complex dynamical behavior, even in the case of smooth flows. Moreover, "analytic" methods may entirely fail to deal with them. We will discuss what can be learned, in such cases, from the topological-dynamical approach, and propose a classification theorem for the behavior of flows near arbitrary compact invariant sets. This result also enables an interesting insight into the topological-dynamical structure of the set of all compact minimal sets of the flow.

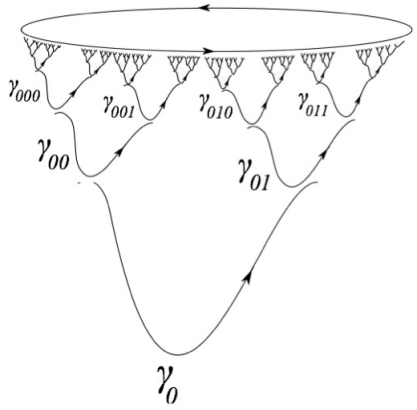

FIGURE 1. Periodic orbit tree displaying a continuum of sequences of *orbits of infinite height*. Smooth flows exhibiting this strange phenomenon already occur in dimension 4.

Remark. Coffee with the speaker is served after the talk (15h30 - 16h00)