

In the 80's the work of de la Llave, Marco and Moriyon showed that for two dimensional Anosov diffeomorphisms, the marked Lyapunov spectrum determines the smooth isomorphism type of the system. Also in the 80's Otal and Croke showed that for negatively curved surface the marked length spectrum determines the isometry type of the surface. In this talk I will discuss new developments along this line of problems, discussing a more general framework where these theory can be developed. This project is joint with A. Gogolev.