

## **Inner and outer HII regions over the discs of spiral galaxies. Physical properties and evolutionary stages.**

**M. Rodríguez-Baras<sup>1</sup>, A. I. Díaz<sup>1</sup>, F.F. Rosales-Ortega<sup>2</sup>, and S.F. Sánchez<sup>3</sup>**

<sup>1</sup> Departamento de Física Teórica, Universidad Autónoma de Madrid, 28049 Madrid, Spain.

<sup>2</sup> Instituto Nacional de Astrofísica, Óptica y Electrónica, Luis E. Erro 1, 72840 Tonantzintla, Puebla, México.

<sup>3</sup> Instituto de Astronomía, Universidad Nacional Autónoma de México, A.P. 70-264, 04510 México D.F., México.

### **Abstract**

The knowledge of abundance distributions is central to understanding the formation and evolution of galaxies. So far most of the relations employed for the derivation of gas abundances have been derived from observations of intermediate disk HII regions and are assumed to be valid for all the ionized regions, despite the known differences between inner and outer regions. The objective of this work is exploring the existence of intrinsic differences in the star formation processes of inner and outer HII regions and their influence in derived properties of the regions, such as elemental abundances, ionization structure, evolutionary state, etc. Using integral field spectroscopy observations from the CALIFA survey and photoionization models, we perform a systematic study and comparison of two inner and outer HII regions samples, obtaining information about their physical properties and evolutionary stages. (See poster).