

ABSTRACT ONLY
(SHORT ORAL PRESENTATION)

DYNAMICS OF H II REGIONS IN BARRED
GALAXIES WITH RINGS

Elcimar P. Rocha¹ & Henri M. P. Plana²

We have studied non-circular motions and dynamics in giants H II regions from the residual velocity maps and using monochromatic H α emission maps and velocity dispersion maps, for a small sample of Barred Galaxies with Rings. The origin of the non-circular motions resides, primarily, in the gas flow due to, for example, the presence of a bar or existence of “warps”, among other reasons. Giants H II regions are an important source of non-circular motions, because they coincide with regions where the amplitude of the non-circular motions is larger. Along with the disk rotation, predominantly circular, we see other motions in the spiral arms and the ring.

The study of the ionized gas velocity dispersion maps, with high spatial and spectral resolution, showed that the dispersion is supersonic ($\bar{\sigma} \approx 21 \text{ km s}^{-1}$). It also showed that regions with high monochromatic emissions are correlated with low velocity dispersion regions and are surrounded by high velocity dispersion regions. We also show that these results are similar to those found for starburst galaxies (H II galaxies). One way to explore the velocity dispersion maps is to build a diagram “ I vs σ ”. This diagram allows us to separate giants H II regions of the interstellar medium (ISM), well as other structures like shells and compact envelope. We did not find shells or other structures here, only giants H II regions and the typical diffuse interstellar medium. Giant H II regions have high intensity and low dispersion when diffuse interstellar medium has low intensity and dispersion velocities ranging from 5 km s^{-1} to 80 km s^{-1} depending of each galaxy.

¹ Instituto Federal de Educação, Ciência e Tecnologia da Bahia - IFBA (elcimar@ifba.edu.br)

² Departamento de Ciências Exatas e Tecnológicas - DCET, Universidade Estadual de Santa Cruz - UESC (plana@uesc.br)