



**IAUS-REG-NUMBER:** IAUS-103

**NAME:** Rafael Andres Pignata

**AFFILIATION:** Observatorio Astronómico de Córdoba

**CONTRIBUTION:** Poster

**TITLE:** New boundaries for Integral Field Spectroscopy

**AUTHORS:** Rafael Andres Pignata, Damian Mast, Walter Weidmann

**AFFILIATIONS:** Observatorio Astronómico de Córdoba

**ABSTRACT:**

Integral field spectroscopy appeared just over 15 years ago and completely revolutionized observational astronomy. With the ability to obtain photometric and spectroscopic data of an extended object from a single observation, it provides the ability to reduce observing times and gives complete spatial information of objects such as Planetary Nebulae. But the incredible benefits of this new technology are tempered when we integrate the IFS with tools that are not up-to-date. Diagnostic diagrams provide the ability to assess various physical conditions in planetary nebulae. But we do not have any diagrams that have evolved from those developed for long slits to reflect new observation and analysis capabilities.

Using IFS data from the MUSE instrument and machine learning, we present preliminary results on the determination of new proposed regions in diagnostic diagrams, to establish how the different components of an NP are distributed in various diagnostic diagrams depending on the physical characteristics of them.