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Characterization of ionized outflows in optically obscured quasars (QSO2) at z $\sim 0.3 - 0.5$.

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Abstract

Feedback induced by the activity of supermassive black holes (SMBH) in massive galaxies is thought to play a critical role in their evolution. In particular, the most powerful outflows with the most extreme effects on the environment are expected in quasars (QSOs). Type 2 QSOs (QSO2) are the best objects to study the way feedback works since the active nucleus is obscured allowing one to better study the properties of the surrounding medium. Ionized outflow are ubiquitous in this kind of systems at different redshift (z), whose kinematics is identified by the presence of a broad component characterized by FWHM > 1000 km s^{-1} and velocity shift vs. $\sim$several $\times$ 100 km s^{-1} with respect to the narrow (systemic) one.
The 'radio–induced' mechanism is another way to feed the AGN, not been sufficiently explored in radio quiet QSOs: it is known that ionized outflows are also ubiquitous in non radio–loud QSO2s at different z. The actual size of the outflows and their efficiency for gas ejection and star formation truncation are controversial. We have recently proposed that large scale ($\geq$ several kpc) extended radio structures might be necessary to identify (even to trigger) outflow signatures across such large spatial scales (Villar-Martín, 2017). Based on this, we investigated the properties and sizes of the ionized outflows in a sample 6 SDSS QSO2 at z $\sim 0.3 - 0.5$ with known extended radio structures with the goal of searching for spatially extended outflow signatures. The study is based on long slit Osiris/GTC spectroscopy and complemented by FORS2/VLT data (Villar-Martín, 2011). (See poster).