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Título: Hunting for the dark phases of galaxy formation with MUSE

Nombre (Autor que presenta): Raffaella Anna

Apellidos (Autor que presenta): Marino

Apellidos y nombre de los autores: Raffaella Anna Marino, Simon Lilly, Sebastiano Cantalupo, Elena Borisova, Sofia Gallego and the MUSE GTO collaboration.

Resumen:

Theoretical models suggest that the early phases of galaxies formation should involve an epoch when galaxies are gas rich and inefficient at forming stars: a dark galaxy phase. Here, I will present new results on the search for these dark galaxies at high redshift ($z \sim 3$) obtained from the analysis of different MUSE deep fields part of the Guaranteed Time of Observation program. In particular, we take advantage of the quasar-induced, fluorescent Lyman alpha emission to study and detect these otherwise invisible objects to our optical telescopes. On the basis of the few pioneering works from the literature, we already know that dark galaxies appear to be compact, gas-rich, and very inefficient at forming stars but the current sample is very limited. Thanks to the unprecedented capabilities of the MUSE instrument, we are now able to provide a more complete census of fluorescently illuminated dark galaxies as well as to analyze and characterize the main properties of these intriguing objects with a unique spatial and spectral resolution.