

# Uncovering hundreds of extreme emission line galaxies with J-PLUS: beyond Green Peas and Blueberry galaxies.

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## Abstract

Extreme emission line galaxies (EELGs) constitute a population of unique systems undergoing very intense events of star formation, which are very rare in the local Universe. They nevertheless hold clues into the limits of star formation processes and can be considered analogs of the first galaxies in the Universe, given the physical properties they share.

To find EELGs, we have used the unprecedented dataset of the second data release of the J-PLUS survey, with 2000 square degrees of the northern sky observed from the Observatorio Astronómico de Javalambre (Teruel) with a set of narrow, medium and broad-band filters. We select as emitters objects with excess of flux in mediumband filters, and remove contaminants using WISE and J-PLUS photometry.

We have found 466 EELGs selected by their [OIII]5007 emission, with 410 of them previously unclassified as such. The derived [OIII]/H $\alpha$  ratios show a wide range, more similar to previous simulations of reionization-era galaxies than Green Peas or Blueberries. The strong [OIII] and high [OIII]/[OII] ratios can be considered proxies for high ionization parameter and potential Lyman continuum leakage. Thanks to the use of mediumband filters, the volume density of the EELGs in this work is more than one order of magnitude higher than previous broadband-selected samples, and similar to magnitude-limited spectroscopic surveys. Additionally, we find 310 extreme H $\alpha$  emitters at  $z \sim 0.3$ , out of which 271 are newly discovered.

Finally, we have obtained longslit spectroscopic data for a subsample these EELGs. Preliminary analysis of the spectra show the accuracy of the sample selection, and the low metallicity and strong ionizing spectrum of the sources.

My poster is available at <https://zenodo.org/record/7048043#.Y8RNftLMJH4>