



Contribution ID: 197

Type: Plenary/Parallel talk

## Indiscriminate $R \sim 50$ spectroscopy in the entire footprint: the spectro-photometric approach of J-PAS

Friday, 26 August 2022 11:00 (40 minutes)

The J-PAS (Javalambre Physics of the Accelerating Universe Astrophysical Survey) scans the sky through 56 narrow band ( $\sim 140 \text{ \AA}$ ) + 3 broad band optical filters that render a  $R \sim 50$  spectra of every object detected in the footprint. The first square degree covered by the miniJPAS survey has produced  $\sigma_{\text{NMAD}} < 0.005 \times (1+z)$  for most galaxies with  $r < 22.5$ , thus enabling an accurate reconstruction of the cosmic web conforming Large Scale Structure (LSS) of the universe. The first tests with realistic photo- $z$  PDFs on simulated mocks are also providing an optimal recovery of the 3D power spectrum up to scales of  $k \sim 0.1-0.2 \text{ h/Mpc}$ . The miniJPAS survey has also allowed the identification of  $\sim 100$  groups with masses above  $5 \times 10^{13} M_{\text{sun}}$ , with high level of purity and completeness up to  $z \sim 0.4$ . Likewise, the narrow band filters are particularly sensitive to broad band features such as QSO/AGN emission lines, enabling miniJPAS to identify and pin the redshift of hundreds of QSOs, to be further followed up spectroscopically with WEAVE-QSO. Finally, J-PAS's sister survey, J-PLUS, with only 12 (7 narrow band + 5 broad band) optical filters, has just covered 3,000 square degrees, and has identified hundreds of thousands of galaxies with high accuracy photo- $z$ s ( $\sigma_{\text{NMAD}} < 0.01 \times (1+z)$ ). The associated preliminary clustering analyses are demonstrating the potential of spectro-photometric surveys like J-PAS and S-PLUS.

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**Session Classification:** Plenary Talk