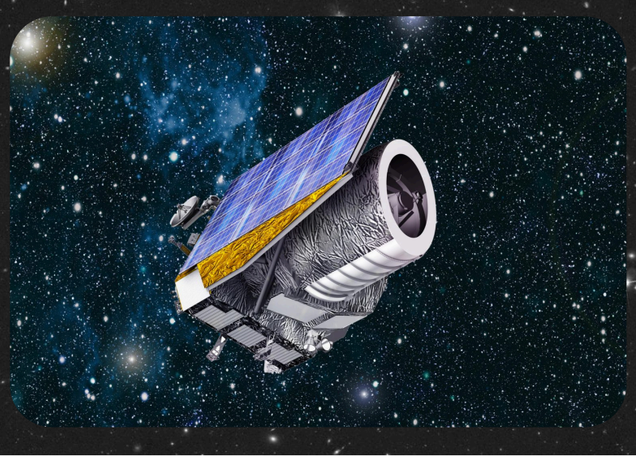
A Glimpse Of Euclid's Universe Through COSMOS

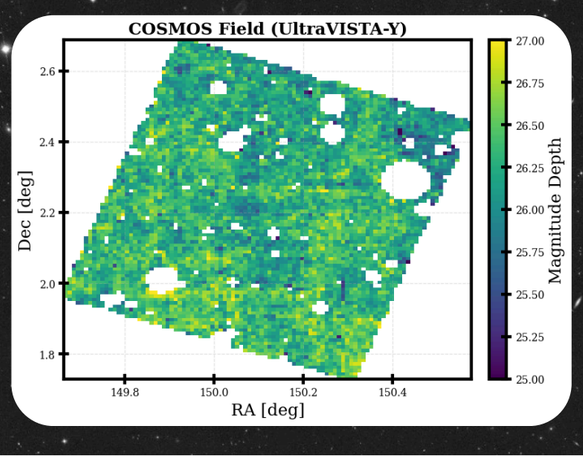
From deep astronomical observations, we simulate how the Euclid Space Telescope will capture the universe. We build a realistic simulated dataset by applying a specific method to infrared measurements. Using this generated catalogue, we then propose a first selection of galaxies to serve as a basis for future surveys.

Background Information

Euclid Space Telescope



COSMOS Field

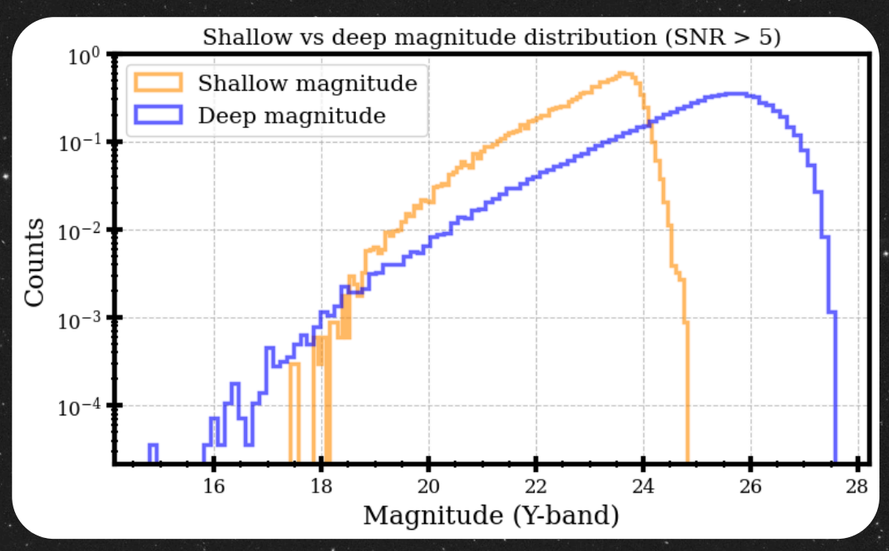


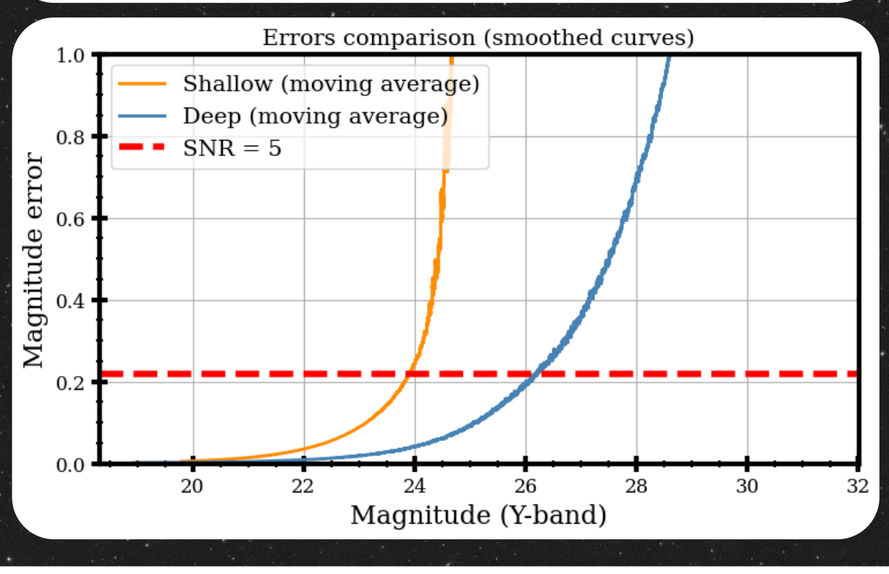
Methodology

i. Filter reliable COSMOS photometric data
ii. Downscale the deeper fluxes to Euclid's depth
iii. Generate & validate the simulated catalogue
iv. Identify Emission Line Galaxies from it

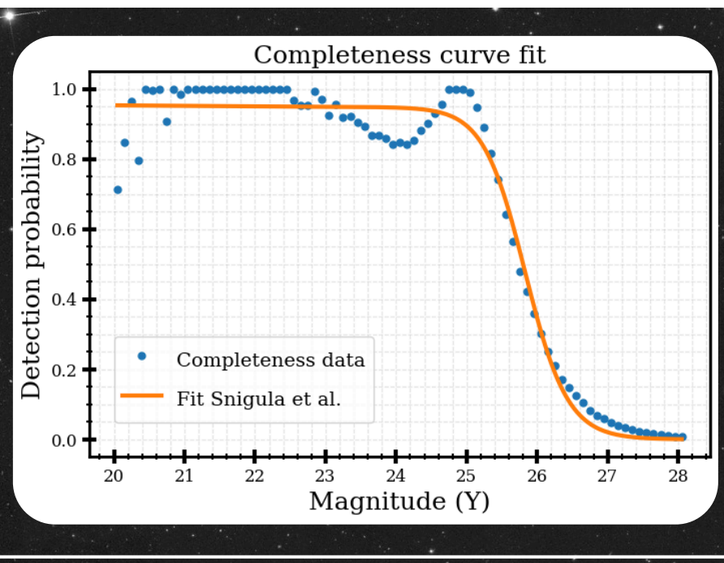
Results

Simulated, Euclid-like catalogue

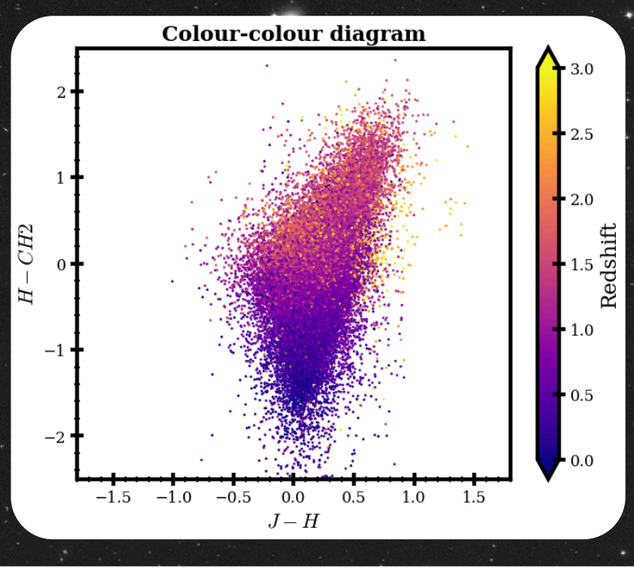


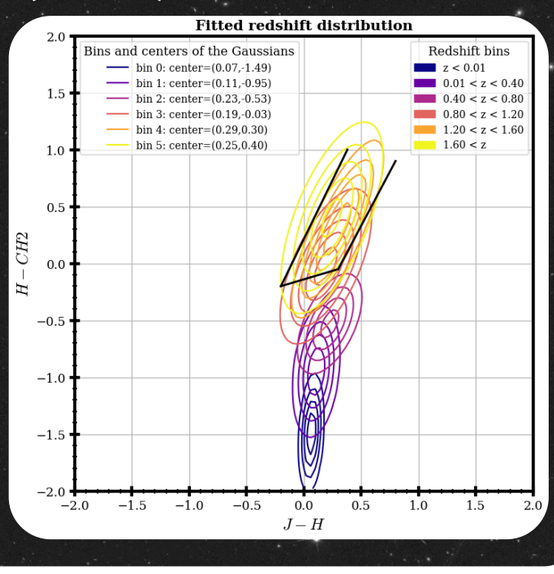


Detection probability function

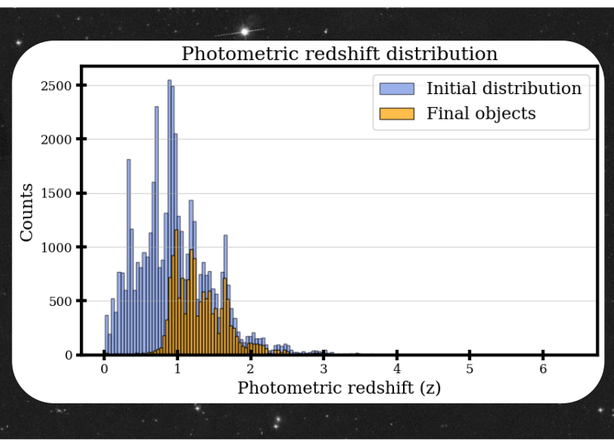


Emission Line Galaxies (ELGs) selection





Redshift Distribution



Conclusion

- Ready-to-use & robust Euclid-like catalogue
- New method to ensure reliable results
- 15,000 potential Emission Line Galaxies

Why It Matters

→ Map the observable universe
→ Test methods before the actual data release
→ Answer fundamental questions

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What's Next ?

- Comparison with Euclid's observations
- Method's efficiency evaluation
- ELGs selection validation

References and more !

In case I am not here to explain my work, feel free to scan this QR code. You will find more information about my project there !