Astronomy & Astrophysics manuscript no. aanda
March 5, 2018

D5.1 Astro: Spectroscopic redshift estimation comparison

Author1[1] and Author2[2,⋆]

[1] Institution 1, Address, Postcode City
e-mail: bla@bla.edu
[2] Institution 2, Address, Postcode, City
e-mail: bla@bla.edu ⋆⋆

Received ...; accepted ...

ABSTRACT

Context. Measuring spectroscopic redshifts for Euclid is hard! Part of the DEDALE project's goals
Aims. Apply sparsity-based and learning methods to solve the redshift estimation problem in the Euclid regime.
Methods. Simulate realistic Euclid-like spectra. Throw everything and the kitchen sink at them: coupled dictionary learning, denoising autoencoders, conv nets, what else?
Results. We solved the problem! Measuring redshifts with 100% accuracy!

Key words. kw1 – kw2 – kw3

1. Introduction

– Challenges of DE, new generation of cosmo surveys to unveil properties.

– Euclid satellite, optical and spectroscopic, WL and BAO.

– Challenges of spectroscopic measurements in general.

– Challenges of Euclid spectroscopic measurements in particular.

– Innovative techniques in signal processing and learning communities. But to develop and calibrate methods, we need realistic simulations.

– COSMOSSNAP generates realistic galaxy populations.

– TIPS generates realistic Euclid-like spectra.

– In this paper, we combine COSMOSSNAP and TIPS to generate a set of realistic spectroscopic and photometric simulations. We test X different newly-developed methods and compare against a benchmark from DF. We assess the performance of each individual method, the characteristics of their failure modes and whether a combination of multiple methods provides additional information and increases accuracy.

– In section bla, we do bla, In section bli we do bli, etc, etc.

Table 1. Table example.

Bla	Bla/[bla]
bla	$\leq bla^{\mathrm{bla}}$

2. Data

2.1. COSMOSSNAP Master Catalog

2.2. TIPS spectroscopic simulations

2.3. Euclid-like sample selection

2.4. "Wide and Deep spectra and analysis strategy"

3. Methods

3.1. Darth Fader

3.2. Coupled dictionary learning and Darth Fader

3.3. k-SVD

3.4. Denoising Auto-encoders

3.5. Convolutional Neural Networks

4. Results and discussion

4.1. "Standard success analysis"

4.2. Dependance on survey properties

bla.

⋆ Just to show the usage of the elements in the author field
⋆⋆ The university of heaven temporarily does not accept e-mails

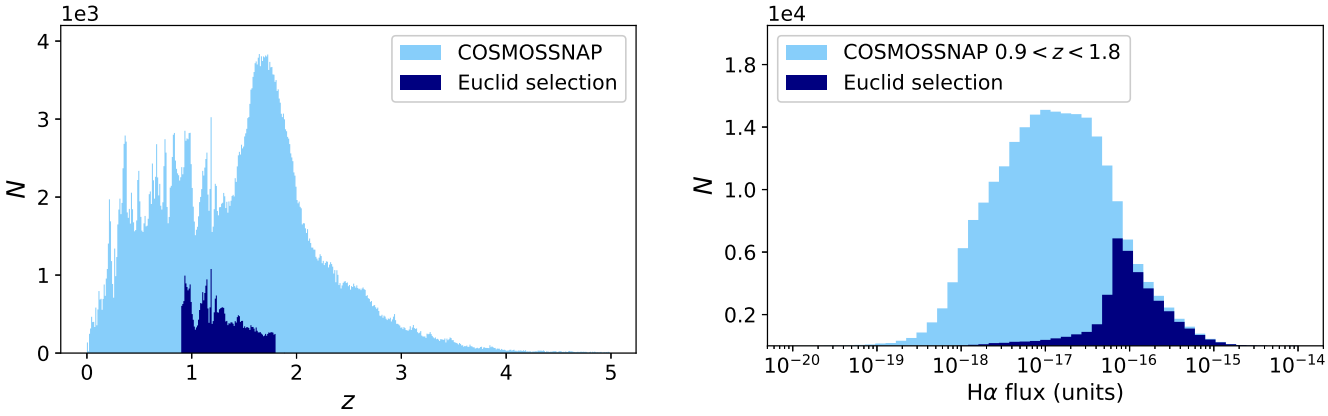

Fig. 1.

5. Conclusions

Why do I have those weird numbers there. Bla. bla.

Acknowledgements. **Don't forget to put the DEDALE acknowledgements!!!!**