HITS
Heidelberg Institute for Theoretical Studies

Funded by the European Union's Horizon 2020 – Grant Nº 824064

MEGAVIS - Real-time spectra analysis and visualization with autoencoders

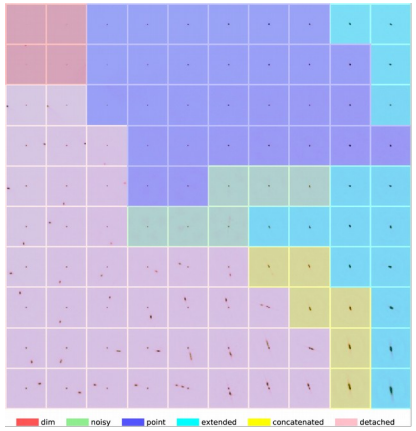
Antonio D'Isanto – Astroinformatics group
IVOA Interop – May 2020

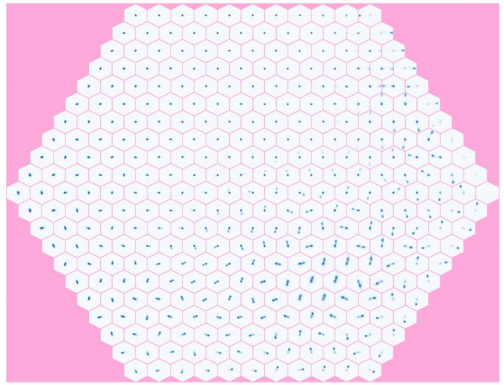
Dimensionality reduction

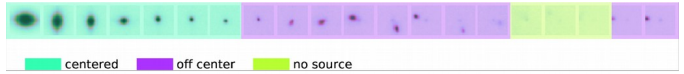
The story so far...

- Radio galaxies

FIRST

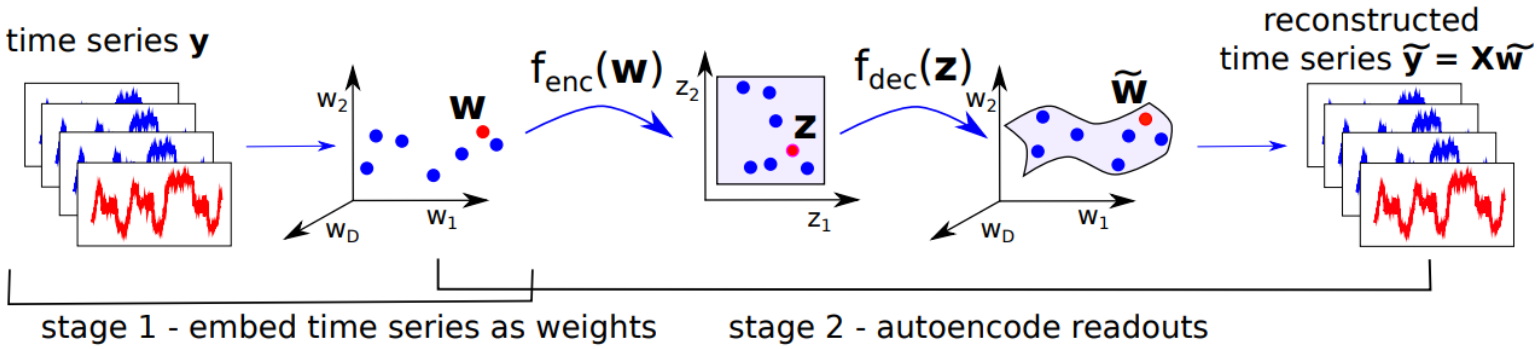






UKIDSS

- Time series



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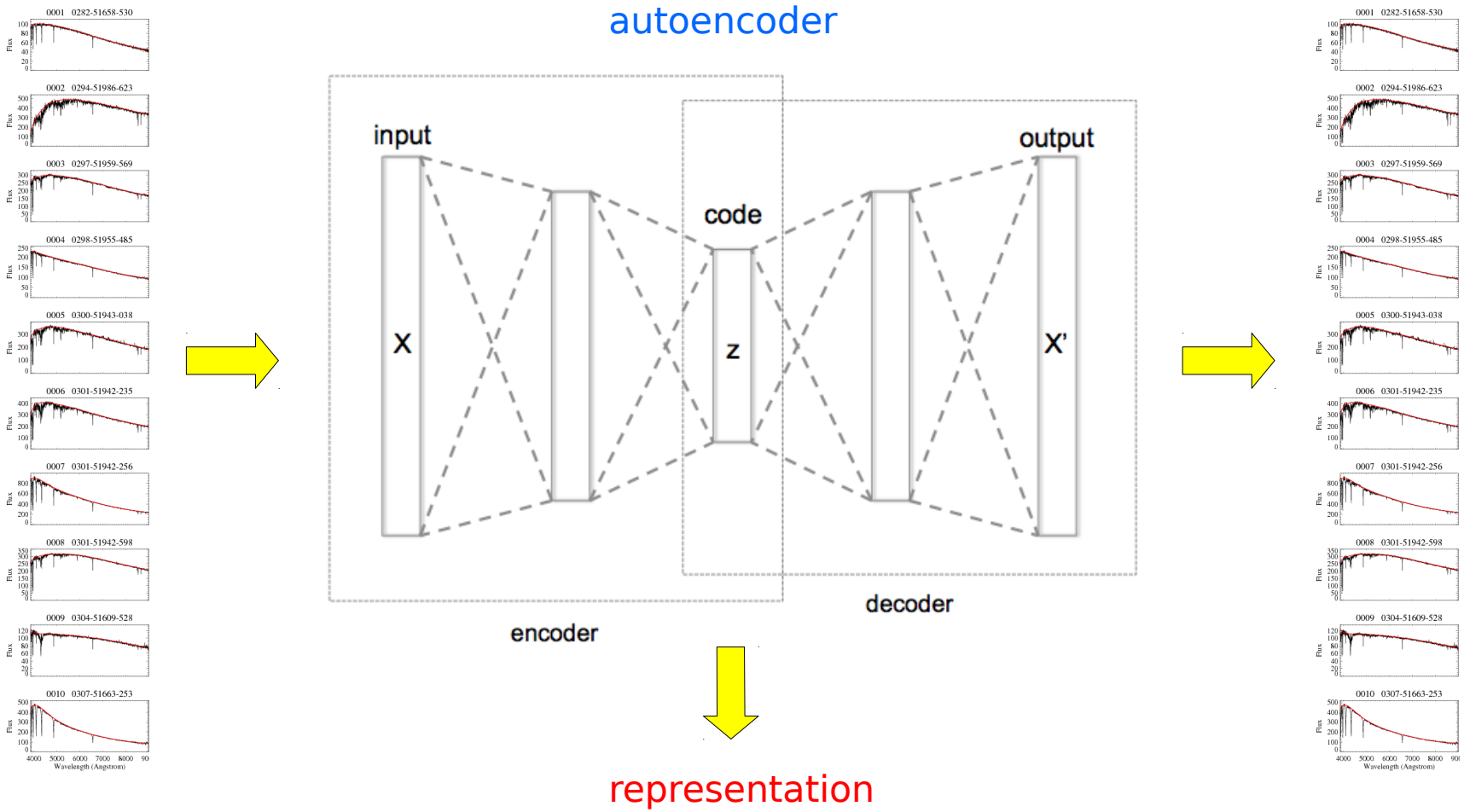
The prototype

Development of a prototype for:
Dimensionality reduction and analysis of spectra



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Prototype requirements

- Multi-model
- Explorative
- General
- Agile
- Visualization
- Interaction
- Support VO

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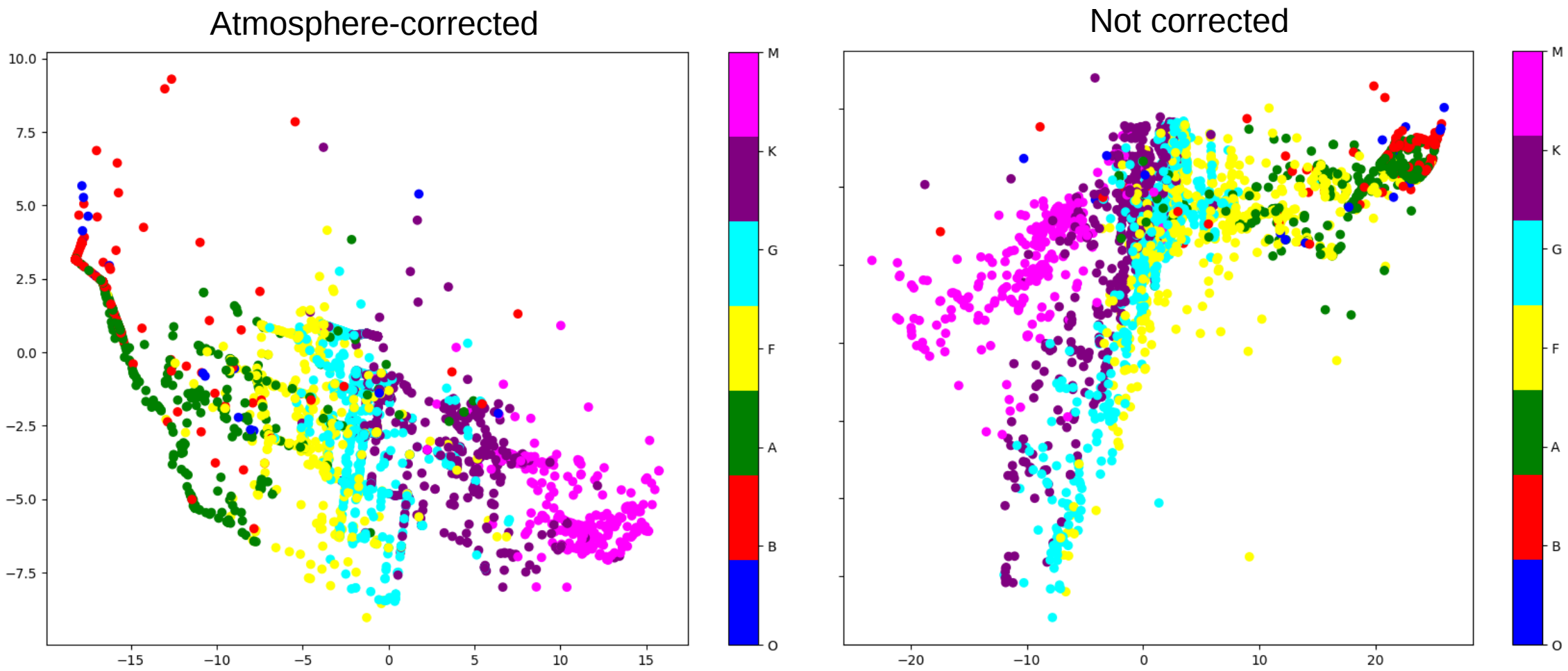
Spectral class sequence in HARPS data



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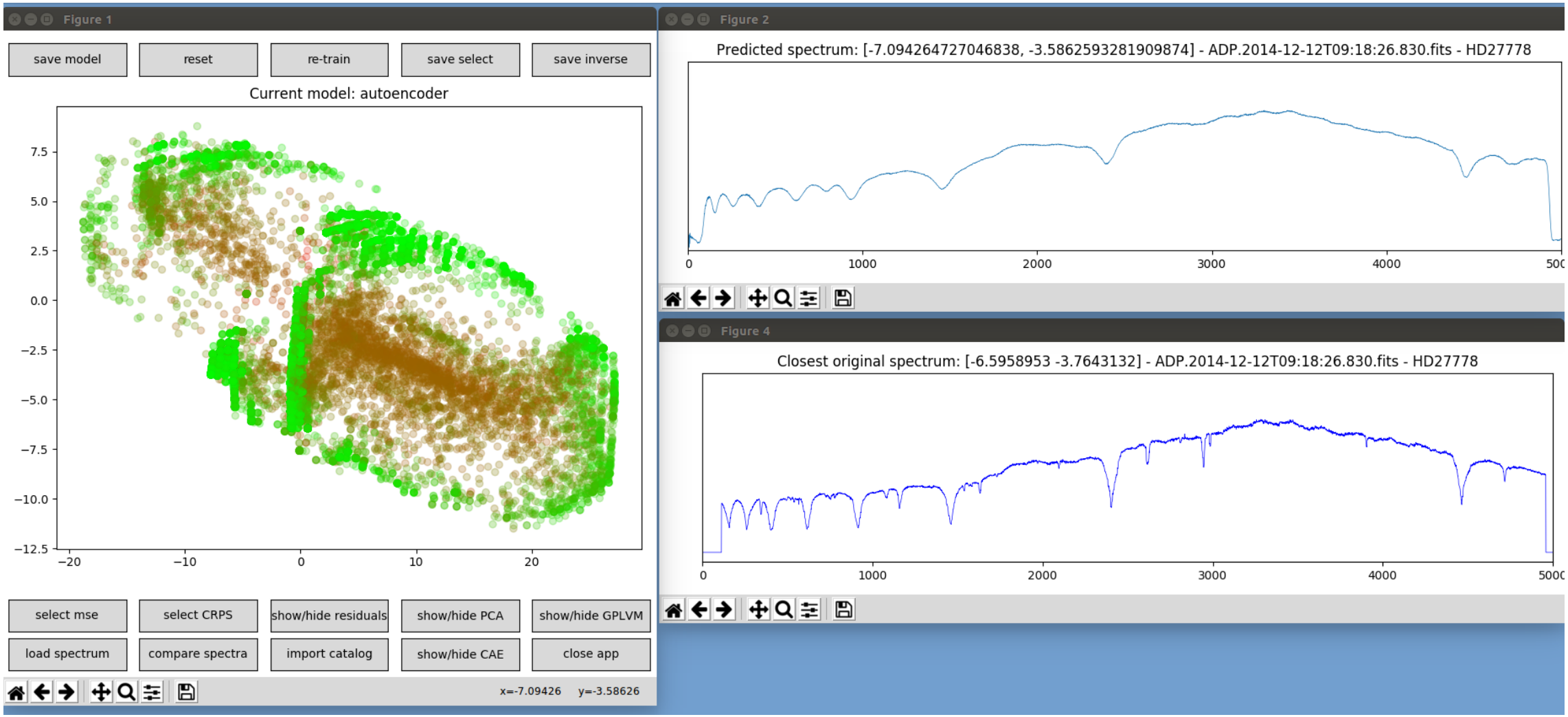

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Discussion

- How to deal with the future amount of data?

- How to deal with data complexity?
  → catalogs are easy task but: Images? Spectra?

- Are current paradigms of data access/analysis ready for Big Data/machine learning?
  → SKA, LSST, etc. are coming: are we going to work on single sources?

- Our idea: allow to search within archive in a novel, explorative way → not explicitly via criteria but implicitly through similarity.

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