

## Designing tools to reduce complexity: the spectroscopic surveys example

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The VIMOS spectrograph at ESO/VLT has been used to carry out many spectroscopic surveys, targeting from a few thousand up to one hundred thousand objects. Each one of these projects presented a high degree of complexity, from the collection of the multi-wavelength data from which to extract the survey parent sample, to the definition of the observations, the data reduction and its validation by team astronomers, the collection of the project data-products, and the final scientific analysis that required putting together these data products and the original parent sample data. Over the years the Astronomical Software group at IASF Milano has designed and produced a series of software tools aimed at hiding as much as possible the project complexity from the astronomers participating to the project. These tools include database and project management and browsing tools, data reduction pipelines specifically tailored for the projects, and data analysis tools that could work via a direct interface to the project database and data repository. Here we propose to briefly summarize this experience, with emphasis on the success and failure moments, and on the lessons learned, which could be applied to future large projects, like the surveys to be carried out with the MOONS or MOSAIC spectrographs, or the Euclid ESA mission.

**Author:** SCODEGGIO, Marco (Istituto Nazionale di Astrofisica (INAF))

**Presenter:** SCODEGGIO, Marco (Istituto Nazionale di Astrofisica (INAF))

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