

**Seminarium Studium Doktoranckiego NCBJ**

**Thursday, 18 March, 9:00**

<https://www.gotomeet.me/NCBJmeetings/phd-seminar>

**Speaker:**

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**Title:**

VIPERS: analysis of the FMR and its projections at  $z \sim 0.7$ . Can observational biases affect their shapes?

**Abstract:**

Galaxy metallicity, a result of the integrated star formation history and evolution of the interstellar medium, is an important property describing galaxy evolution. As such it has been widely studied in the local Universe with the data from the SDSS, as well as its relations with galaxy stellar mass and SFR. The relation between these three galaxy physical properties, known as Fundamental Metallicity Relation (FMR), was shown not to undergo any significant evolution at least up to  $z \sim 2$ . In spite of that, different studies find some differences in 2D projections of this relation. However, these studies are based on very different samples, with different data selection at different redshift ranges. In our work we aim at finding FMR evolution from  $z \sim 0.6$  to  $z \sim 0$ , making use of the unprecedented statistics of the VIMOS Public Extragalactic Survey (VIPERS) and comparing it to the local SDSS sample. Having that goal in mind, we study the effect of different selection biases introduced into the SDSS sample on both the FMR and its 2D projections. We find significant differences occurring when different data selection, mimicking the selection of higher redshift samples, is applied. Then, we compare these results with the data from the VIPERS sample at  $z \sim 0.6$ . We conclude that both FMR and its projection at  $z \sim 0.6$  to  $z \sim 0$  are not in agreement even when the data selection effects are carefully applied. This implies a small but statistically significant evolution of the FMR between  $z \sim 0.6$  to  $z \sim 0$  which needs to be taken into account in future studies.