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Extragalactic Big Data: promises and challenges

Agnieszka Pollo (and the team)

]5pt] Present-day astronomical catalogues already very often fall into the Big Data category, listing millions or even billions of sources. Near-future projects like LSST conducted at the Vera Rubin Observatory will raise these numbers by orders of magnitude. The rize is not only in numbers: newly observed objects are fainter, more distant or otherwise different from the ones which are already well studied. In the same time, the amount of information available for each source is usually very limted. On one hand, this creates a perfect area for application of statistical and machine-learning based methods. On the other hand, we need to face a number of challenges: small training sets, limitations of the feature space(s), extrapolation ability and interpretability of the results.

In my talk I plan to review some results of the methods applied by our team to classify and effectively extract information on different types of astrophysical sources from large astronomical surveys, including (but not limited to) VIPERS, AKARI and WISE. (TBC)