

Validation of the Euclid Cluster Catalogue with external data

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The *Euclid* spacecraft was launched in July 2023 to the Earth-Sun Lagrange point L2. The mission will produce one of the largest galaxy cluster catalogues with tens of thousands of clusters over the 15 000 square degrees of its extragalactic sky survey. This catalogue will need to be validated with external data, in order to check for newly discovered clusters, to prepare analyses of cluster multi-wavelength scaling relations, and to characterize the *Euclid* selection function. In preparation, we used the Dark Energy Survey (DES) Y1 RedMaPPer catalogue as surrogate for the *Euclid* catalogue to put in place our validation procedures with different millimeter, optical, and X-ray surveys. We used two complementary matching methods to find counterparts for clusters in position, but also in redshift. These methods will be explained with the example of crossmatches between RedMaPPer and the SRG eROSITA catalogue, which contains a large sample of X-ray clusters in the western Galactic hemisphere.

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