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Neural Network classifier for the generation of clean Magellanic Cloud samples

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The proximity of the Magellanic Clouds (MCs) to the Milky Way (MW) makes them a perfect laboratory for testing methodologies and models designed for the study of external galaxies using Gaia (ESA) data. To do so, we need to separate in the Gaia data the MCs stars from the foreground MW stars, in order to obtain "clean" MC samples. This is achieved through the design and training of a neural network classifier; the algorithm uses as much of the Gaia DR3 types of data as possible and its results have been validated through comparison with independently classified data (Jiménez-Arranz+23a,b).

Primary author: JIMÉNEZ ARRANZ, Óscar

Co-authors: MASANA, Eduard (Institut de Ciències del Cosmos (ICCUB-IEEC)); Dr CHEMIN, Laurent (Instituto de Astrofísica); ROMERO-GOMEZ, Merce; Dr MCMILLAN, Paul (Lund Observatory); Dr ANTOJA, Teresa (Institut de Ciències del Cosmos); LURI, Xavier (ICCUB); ROCA-FÀBREGA, santi (Universidad Complutense de Madrid)

Presenter: JIMÉNEZ ARRANZ, Óscar