

Firmamento: a new-concept, web-based, data analysis tool dedicated to multi-messenger astronomical sources.

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Firmamento is a new-concept platform dedicated to multi-messenger astrophysics that combines imaging, spectral, and time-domain data with specific algorithms, machine learning tools, and AI. Firmamento can identify counterparts within the uncertainty regions of sources detected by instruments with non-negligible localization areas, including X-ray, gamma-ray, and astrophysical neutrinos. Additionally, Firmamento can build and automatically characterize broadband spectral energy distributions (SEDs), which can be used for model fitting or to identify/confirm the nature of the source and, in the case of blazars, to predict detectability in the very high energy (VHE) band. The integration with a specialized version of ChatGPT makes Firmamento even more powerful and accessible to non-experts.

Finally, I will present the preliminary results of two studies based on Firmamento: the identification of previously unassociated sources in the Fermi 4FGL-DR4 catalog and the identification of blazars in the eRASS1 survey, along with the corresponding predictions for CTAO detections.

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