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The Virtual Observatory in the age of multimessenger Astroparticle Physics

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The International Virtual Observatory Alliance (IVOA) plays a pivotal role in advancing the FAIR principles within the domain of astrophysics, ensuring that scientific data is Findable, Accessible, Interoperable, and Reusable (FAIR). The IVOA establishes standardized models for data and metadata, and data access protocols. Using Virtual Observatory (VO) compatible tools, it enables seamless retrieval of data from different datasets and catalogs, fostering the connection and interoperability between different observatories, surveys, and research groups. Until recent times the very-high-energy astrophysics and astroparticle physics domains have not been specifically integrated into the IVOA initiatives. However, a growing effort is present in the community to delineate standards and data formats that can adapt the IVOA guidelines to the field's specificities. This effort has begun to pay off with the first integration of high-level data products from H.E.S.S. into the VO environment, and the creation of the common data format for gamma-ray astronomy (GADF), which is currently being reworked into the very-high-energy open data format (VODF), a data and metadata format for gamma-ray and multimessenger astrophysics as much compliant as possible with the future VHE features of the IVOA standards.

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