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Strengthening leverage of Astroinformatics in inter-disciplinary Science

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Most domains of science are experiencing a paradigm shift due to the advent of a new generation of instruments and detectors which produce data and data streams at an unprecedented rate.

The scientific exploitation of these data, namely Data Driven Discovery, requires interoperability, a massive and optimal use of Artificial Intelligence methods in all steps of the data acquisition, processing and analysis, the access to large and distributed computing HPC facilities, the implementation and access to large simulations and interdisciplinary skills that usually are not provided by standard academic curricula. Furthermore, in order to cope with this data deluge, most communities have leveraged on solutions and tools originally developed by large corporations for purposes other than scientific research, and accepted compromises to adapt them to their specific needs. Through the presentation of several astrophysical use cases, we show how the data driven based solutions could represent the optimal playground to achieve the multi-disciplinary methodological approach.

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Session Classification: Cosmic Insights from Big Data: How Machine Learning is Decoding the Universe

Track Classification: Artificial Intelligence Methods (AI): Cosmic Insights from Big Data: How Machine Learning is Decoding the Universe