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How astronomy shares and reuses big and small data

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Astronomy is based on observations from ground- and space-based telescopes, and it has been for many years at the forefront of the world-wide sharing of scientific data, with open access (in general after a proprietary period), the definition of common formats, and the early networking on on-line services on the web, including observatory archives, added-value data bases such as the ones developed by Strasbourg astronomical data centre CDS, and academic journals. Since the turn of the century the development of the Virtual Observatory, a framework of standards and interoperable tools, allows seamless access to the wealth of available on-line resources.

The VO framework is open and inclusive, and all data producers, large agencies as well as teams in research labs, can provide their data in the framework. Also, services host 'smaller', such as the CDS VizieR database for data attached to publications, and this 'long tail' of research data is made available, discoverable and usable as well as the 'Big Data' produced by the large facilities and the large sky surveys.

The talk will give an overview of the history and status of data sharing in the discipline. On-line resources are used by astronomers in their daily research work, combination of data from different origins for multi-wavelength, multi-instrument studies, is at the core of the scientific process, and the change of the research paradigm towards 'Open science' is already mainly accomplished.

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