

Scientific computing and data management for the users of the European Spallation Source ERIC

The importance of scientific computing and data management for harnessing the full potential of the European Spallation Source (ESS) was recognized early on in the ESS' s design phase. The ESS Data Management and Software Centre (DMSC) was therefore already established at the foundation of ESS and charged with providing the scientific computing tools and services that users need from proposal to publication; supporting them with generating high impact science. Hence, the DMSC is responsible for providing solutions for the full data pipeline associated with an experiment at the ESS, beginning with the user portal and data acquisition, over data reduction, to data analysis, modelling and data management, and instrument simulations.

In this presentation, the strategy for providing a common data pipeline that suits the whole suite of instruments under construction at ESS is discussed. Specific solutions for different steps in the data pipeline will be presented. Moreover, challenges and opportunities associated with developing software at a non-operational facility, the emergence of artificial intelligence, and Findable, Accessible, Interoperable, and Resuable (FAIR) data will be discussed.

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Session Classification: Software