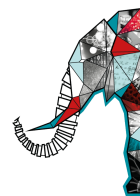


25^e Congrès Général
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SP3: Making the invisible, visible: the beauty of synchrotron science - Prix Friedel-Volterra

Tuesday, 9 July 2019 11:00 (30 minutes)

Séance “grand prix” / Prix Friedel-Volterra

Synchrotron science has made “the invisible, visible” - quoting Commissioner C. Moedas and French Research Minister F. Vidal.

Since the first opportunities in the 70's, the second generation sources in the 80's and the advent of the ESRF in pioneering and opening the present massive use of synchrotron radiation at the so-called third generation sources, the investigation of condensed and living matter, and of cultural heritage artefacts has made giant steps in linking atomic structure to function. This research has impacted many areas of fundamental science, and is increasingly contributing to applied research.

The story is not yet finished as a new page is now opening due to another new step improving qualitatively the synchrotron X-ray source properties. With at least a factor of 100 increase in brightness and coherence - thanks to a new storage ring concept developed at the ESRF and presently under construction - synchrotron based research is moving to a new fourth generation paradigm of X-ray sources, which will enable new applications in key areas of material science, structural biology, and X-ray imaging applications.

I will review the status and new application of synchrotron science, sometime indulging in mentioning the contribution that I was involved with in studying magnetic properties at the atomic level and the dynamics of collective atomic excitation at atomic wavelengths.

Choix de session parallèle

Presenter: SETTE, Francesco (European Synchrotron Radiation Facility)