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PLENARY: Magnetic and electronic properties of surfaces by advanced soft x-ray synchrotron radiation techniques

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Abstract content
   (Max 300 words)

The use of synchrotron radiation is very powerful for the electronic and magnetic characterization of solid surfaces, exploiting its main properties as high brilliance, high flux, high stability, energy and polarization tunability, and pulse structure. The last features are of paramount importance to investigate the electronic magnetic properties of oxides, oxides thin films and buried interfaces.
In the first part of my talk I will introduce the audience to absorption spectroscopy based on synchrotron radiation polarized light. The layout of a beamline dedicated to dichroism investigation (the BACH beamline at Elettra – Italy) will be described and some specific experiments performed on thin films oxide interfaces, providing important information about strain, orbital occupation and magnetic anisotropy, will be discussed.
In the second part, I will introduce a new apparatus suitable for laser-pump and synchrotron radiation-probe time-resolved measurements in the sub-ns range. The system operates by exploiting the multi-bunch filling mode of the Elettra synchrotron storage ring to probe optically excited states with a continuous array of x-ray pulses. Preliminary data will be presented.

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