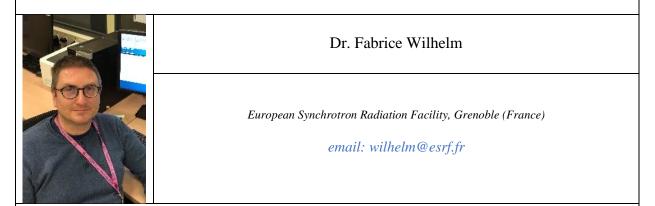
## X-ray Magnetic Circular Dichroism Studies of 5*f*-based Magnetic Systems



Over the last 25 years, x-ray absorption near edge structure (XANES) and x-ray magnetic circular dichroism (XMCD) spectroscopy<sup>1</sup> have proven to be particularly valuable tool to study the electronic and magnetic properties of actinide-based compounds<sup>2</sup>. Application of of magneto-optical sum rules to XMCD spectra recorded at the  $M_{4,5}$  edges offer a possibility to disentangle the spin and orbital contributions to the total magnetic moment carried by the 5*f* electrons of actinide atom. Monitoring XMCD signal as a function of applied magnetic field affords element selective magnetization curve. In this lecture, use of XANES/XMCD techniques in physics and chemistry of actinides will be illustrated by a number of selected examples, such as molecular magnets, strongly correlated electron systems and uranium-based multilayers.

## References

1) *Magnetic Circular Dichroism in the Hard X-ray Range*, A. Rogalev and F. Wilhelm, The Physics of Metals and Metallography, Vol. 116, No. 13, pp. 1285–1336 (2015).

2) *Magnetism of uranium compounds probed by XMCD spectroscopy*, F. Wilhelm, J.-P. Sanchez and A. Rogalev, ournal of Physics D: Applied Physics, Vol. 51, No. 33, 333001 (2018).