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Abstract for an Invited Paper
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Ultrafast magnetic imaging of nanostructures¹

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Today's technology advances into smaller and more complex structures for information processing. As structures get smaller, many processes of interest become faster as the propagation speed of excitations couple the length scale with the time scale. Microscopic techniques with a spatial resolution reaching the atomic level are being developed with very impressive success. On the other hand, time resolved techniques based on ultrafast laser systems allow us to explore processes on the femtosecond time scale. The focus of this talk is to unite the two worlds, the ultra-fast and the ultra-small. A powerful approach to time resolved microscopy is based on x-ray techniques. The wavelength of x-rays offers a spatial resolution in the nanometer range. Ultrafast x-ray techniques are currently being developed based on synchrotron sources as well as free electron lasers. The talk will demonstrate ultrafast microscopy techniques on imaging magnetization reversal dynamics in spin transfer devices.

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