

## Conférence - CEISAM - UMR CNRS 6230

17 mars 2016  
11h00 - Salle Marie Curie

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### Functional NMR

NMR is a physical phenomenon with an abundance of applications. With the progress in development of instruments and measurement methods, the capabilities and utilization of NMR expand. In a wider sense NMR can be viewed as a tool to assist in the achievement of certain tasks. Placing the focus on the recent development of compact NMR instruments for relaxation measurements, imaging and spectroscopy, NMR can be understood as a helper in probing the function of materials and processes. In this regard, a conceptual and simple introduction to NMR will be given followed by selected examples illustrating applications of 'functional NMR' to nondestructive testing of rubber in asphalt and fluid transport in plants and stratified rock by NMR relaxometry, as well as to the accurate determination of the wax content in polyethylene and the real-time monitoring of a fermentation process by NMR spectroscopy. The lecture concludes by addressing current developments in boosting the detection sensitivity on the way to make the NMR instrument even smaller.

B. Blümich, S. Haber-Pohlmeier, W. Zia, *Compact NMR*, de Gruyter, Berlin, 2014»

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