

Recent progress in force-detected MRI

Martino Poggio¹

¹*Department of Physics, University of Basel, Klingelbergstrasse 82, 4056 Basel, Switzerland*

Over the last 20 years, researchers have been making steady progress improving the sensitivity of force-detected magnetic resonance. Sensitivity has doubled roughly every 8 months and presently surpasses the sensitivity of conventional, inductive nuclear magnetic resonance detectors by 8 orders of magnitude. In 2009, IBM researchers demonstrated the promise of these developments by using magnetic resonance force microscopy (MRFM) to capture 3D images of individual virus particles with a resolution better than 10 nm. I will describe new efforts to apply this technique to the small ensembles of nuclear spins contained in semiconductor nanostructures such as quantum wells, nanowires, and quantum dots.