

Abstract Submitted  
for the 4CF13 Meeting of  
The American Physical Society

**Digital Revolution in Electron Paramagnetic Resonance Spectroscopy** MARK TSEYTLIN, University of Denver — Exponential growth in computing power has reached the level that makes reshaping of electron paramagnetic resonance (EPR) spectroscopy inevitable. An EPR spectrometer, as we know it today, conceptually is not very different from ones that were built 40-50 years ago. It performs two basic types of experiments: (i) continuous wave with magnetic field modulation and (ii) pulse. Both types of experiments produce data that are easy to interpret visually or with minimal data processing. Spectroscopy, microscopy and imaging, driven by the digital progress, are now undergoing a paradigm shift toward a different concept, which is to collect a vast amount of complex data and use a computer to process the data into meaningful results. This approach speeds up an experiment and brings in qualitatively new information. This presentation describes a concept of a digital EPR spectrometer, essential parts of which are an arbitrary waveform generator, high-speed digitizer, personal computer and new data processing algorithms

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Date submitted: 20 Sep 2013

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