

First Order Reversal Curve (FORC) Measurements (C181)

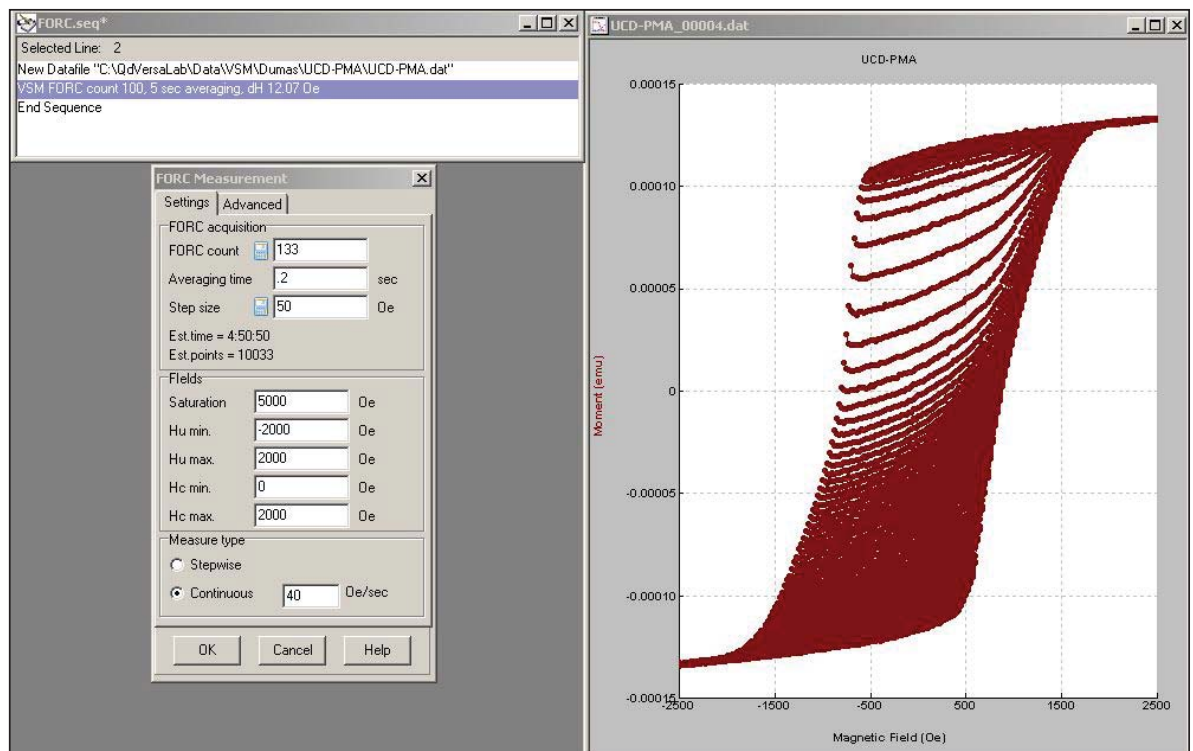
First Order Reversal Curve (FORC) measurements and their subsequent analysis provide additional insights into the magnetic reversal mechanisms of bulk, thin film, and nano-patterned samples that conventional major hysteresis loops cannot, including:

- Providing a qualitative/quantitative fingerprint of the magnetic reversal mechanisms
- Separating reversible and irreversible switching mechanisms
- Calculating reversal mechanism phase fractions
- Calculating coercivity and interaction field distributions

Key Features:

- Fully automated FORC acquisition using MultiVu
- Output file preformatted for easy import into FORCinel postprocessing software
- Compatible with VSM (standard and large bore coilsets) and VSM oven
- Compatible with PPMS[®], VersaLab[™], and DynaCool[™] allowing for FORC measurements up to 16T spanning 1.8 to 1000 K

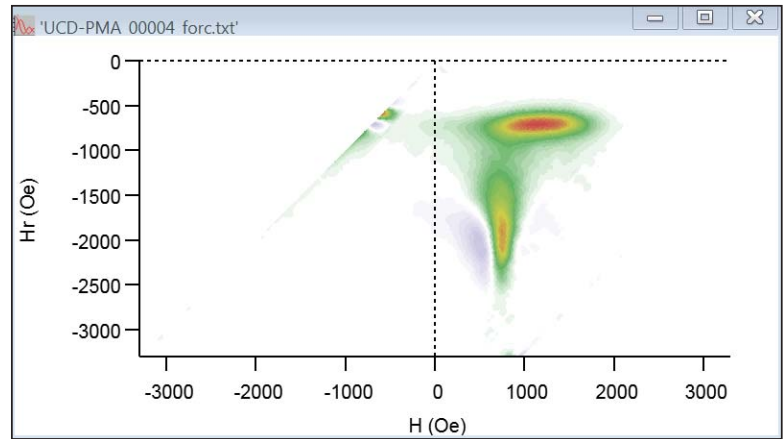
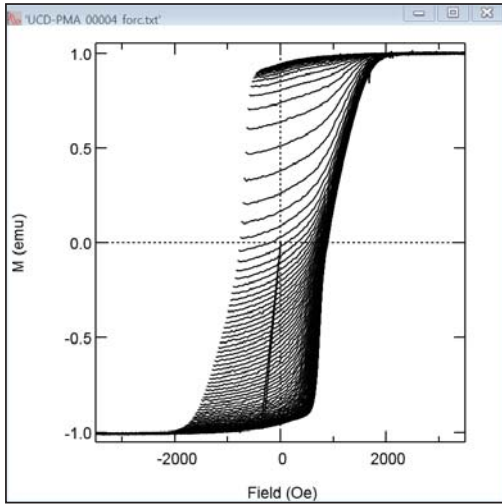
MultiVu User Interface



Example FORC measurements on two canonical systems:

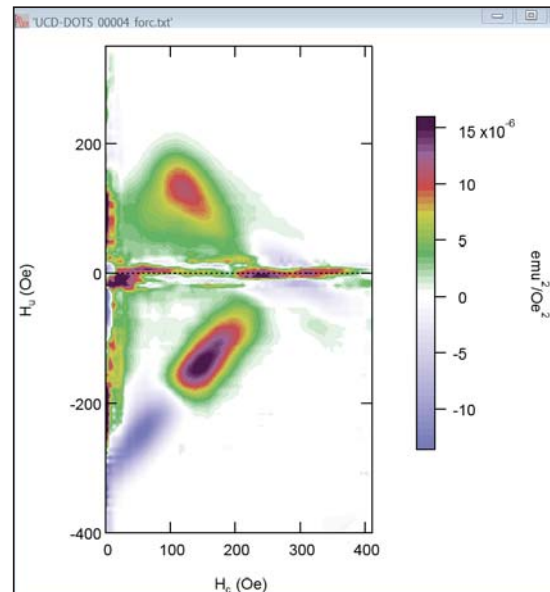
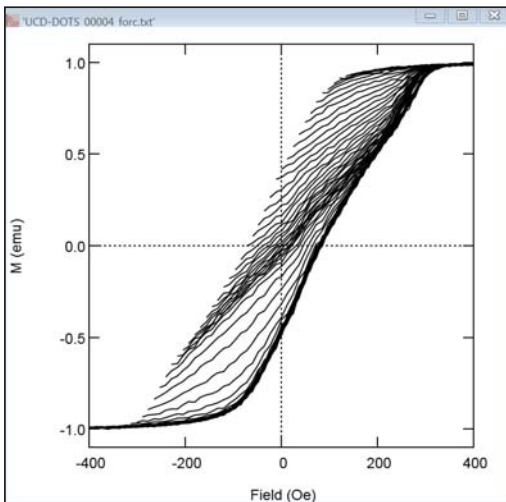
Si/Pd(15 nm)/[Co(0.5 nm)/Pd(1 nm)]₁₀

- Thin film exhibiting perpendicular magnetic anisotropy



Si/Pd(15 nm)/Co(32 nm) thin film patterned into ~560 nm diameter disks

- Magnetic disks sample exhibiting vortex state reversal



- Samples provided by Prof. Kai Liu, UC Davis
- Data processing performed by FORCinel and Igor Pro

PPMS EverCool DynaCool VersaLab

Model	C181
First Order Reversal Curve (FORC):	
Magnetic Field Range	Up to 16T
Temperature Range	1.8 – 1000 K (with oven option)
Sensitivity - Standard Coil (6.3mm)	6 x 10 ⁻⁷ emu
Sensitivity - Large Bore Coil (12mm)	1.5 x 10 ⁻⁶ emu
Sensitivity - Oven Option	< 1 x 10 ⁻⁵ emu

 **Quantum Design**

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Specifications subject to change without notice
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