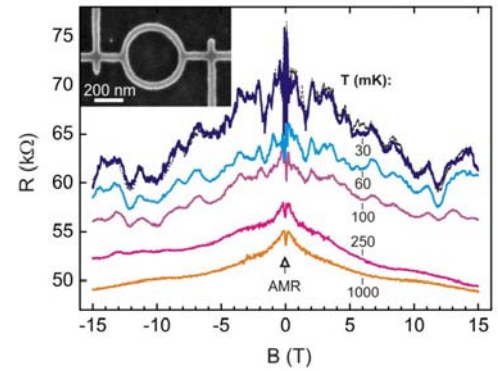


First observation of phase-coherent phenomena in the ferromagnetic semiconductor (Ga,Mn)As

Konrad Wagner reports the first observation of universal conductance fluctuations and Aharonov-Bohm oscillations (Ga,Mn)As nanostructures in the August 4 issue of Physical Review Letters [1]. From an analysis of the conductance fluctuations he extracted a phase coherence length of $l_\phi \sim 100$ nm at 20 mK as well as a $l_\phi \sim T^{-1/2}$ temperature dependence.

Figure: Magnetoresistance of a (Ga,Mn)As ring with a diameter of 400 nm and a ring width of 40 nm. The inset displays a top view of the ring. The temperature was varied from 1 K (bottom trace) to 30 mK (top trace) and the current through the device was set to 100 pA. To demonstrate the reproducibility of the resistance oscillations observed below 200 mK the 30 mK trace is shown for an up-(blue line) and down-sweep (dashed black line) of the B-field.



- [1] K. Wagner, M. Reinwald, W. Wegscheider, D. Weiss, 'Dephasing in (Ga,Mn)As nanowires and rings', Phys. Rev. Lett. **97**, 056803 (2006)