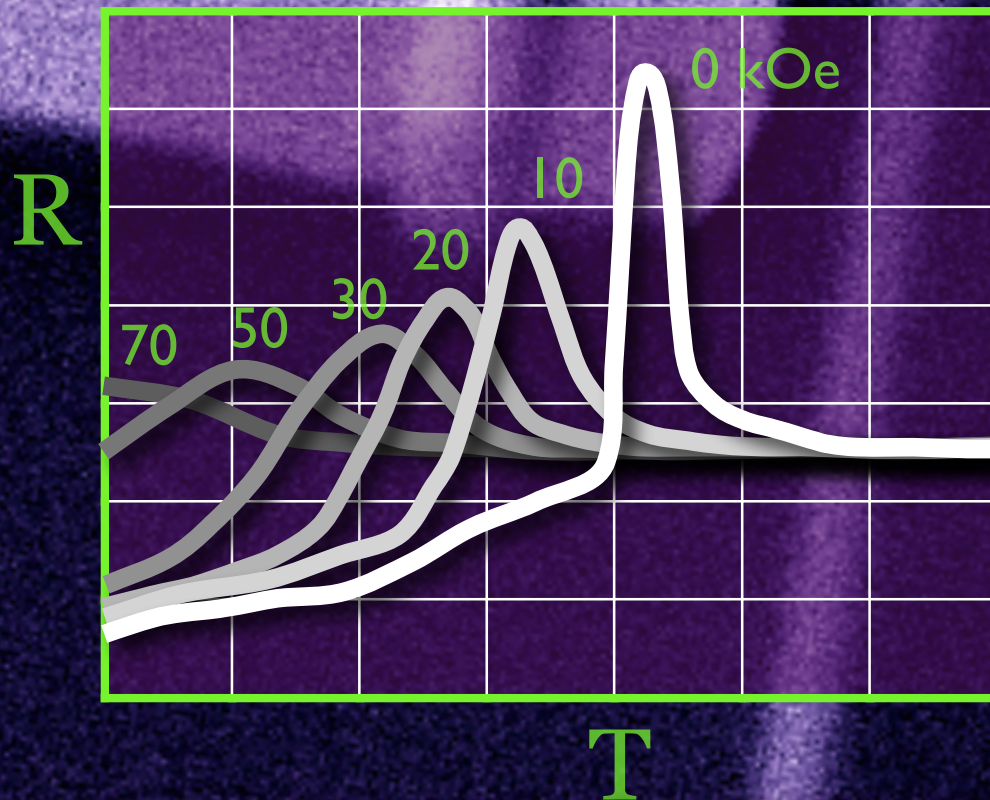


Spins in conflict



Ferromagnets and superconductors have incompatible spin ordering: electron spins in ferromagnets are all aligned, while spins in superconductors are paired in opposite directions. When a magnetic cobalt nanowire 50 nm in diameter is attached to superconducting tungsten electrodes, the resistance of the nanowire shows a huge peak near the temperature of tungsten's superconducting transition, before becoming a superconductor of its own at lower temperatures.

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