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Kondo effect in ferromagnetic atomic scale junctions PAVLO ZOLOTAVIN, PATRICK WHEELER, DOUGLAS NATELSON, Department of Physics and Astronomy, Rice University — The Kondo effect is one of the hallmark manifestations of electron-electron interactions in solids. Interest to the Kondo effect was reignited recently in connection with quantum dots and molecular junctions. In particular, it was theoretically predicted that when a quantum dot is in the Kondo regime, simultaneous one- and two-quasiparticle scattering results in a universal average quasiparticle charge of $(5/3)e$ that could be measured by shot noise. Experiments in quantum dots and carbon nanotubes have indeed found enhanced noise in the Kondo regime. The abovementioned theoretical prediction and experimental verification were made for a weak-coupling limit, when Kondo temperature, T_K, amounts to only several degrees. Recently the presence of Kondo resonance with substantially larger T_K was demonstrated in mechanical breakjunctions made from ferromagnetic metals. This discovery opens the possibility of testing the validity of the theoretical predictions in the strong coupling limit and in the presence of magnetically correlated electrodes. We will report the results of the ongoing shot noise measurements in ferromagnetic breakjunctions.

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