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Effect of contacts on spin lifetime measurements in Graphene

EVAN SOSENKO, VIVEK AJI, University of California, Riverside — Current spintronic devices favor Graphene's high carrier mobility, however spin precession measurements using the Hanle effect in nonlocal spin valve devices have yielded spin lifetimes between 100 ps and 1 ns. These are orders of magnitude smaller than what is observed in ESR measurements or expected theoretically. In this talk, I revisit the issue of contact induced losses, and establish the extent to which it accounts for this discrepancy. We use the standard approach of solving the Bloch equations augmented by boundary conditions characterizing the device.

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