5) Abstract of the poster:
"Magnetically-induced oscillations of the spin polarization in the Datta-Das transistor"

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The electric control of intrinsic magnetic degrees of freedom is very important as it offers a practical means to manipulate and probe electron spin transport. It has been realized that the tunable spin-orbit effect in quantum wires can in principle serve as a means to achieve this goal. Here we investigate the effect of the applied magnetic field on the Datta-Das spin transistor within the scattering matrix approach and show that the interplay of the spin-orbit interaction with magnetic field provides enhanced control over the electron spin polarization and lends itself to potential experimental applications. We also predict a novel effect of magnetically-induced oscillations of the electron spin in a certain range of applied magnetic field.