Universality of the Kondo effect in quantum dots with ferromagnetic leads: EPAPS.

M. Gaass,[1,*] A. K. Huettel,[1] K. Kang,[1,2] I. Weymann,[3,4] J. von Delft,[3] and Ch. Strunk[1]

[1] *Institute for Exp. and Applied Physics, University of Regensburg, 93040 Regensburg, Germany*

[2] *Department of Physics, Chonnam National University, Gwang-Ju 500-757, Korea*

[3] *Physics Department, ASC, and CeNS, Ludwig-Maximilians-Universität, 80333 Munich, Germany*

[4] *Department of Physics, Adam Mickiewicz University, 61-614 Poznań, Poland*

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* To whom correspondence should be addressed: markus.gaass@physik.uni-regensburg.de

In this supplement we show line cuts of the differential conductance $dI/dV(V_{sd})$ and the normalized equilibrium zero-temperature spectral function $\mathcal{G}(\hbar\omega/e)$ from figure 2 of our main text. The line cuts were taken at constant gate voltage V_{gate} in the center of the Coulomb diamond. With the help of these line traces the overall shape of the differential conductance can be seen more clearly, allowing for a more detailed comparison between experimental and theoretical data.

The panels in figure S1 (a) show the differential conductance for the same external magnetic field values as the corresponding panels in figure 2 of the main text. At B = 0T clearly two peaks are observable which are separated by roughly 550 µV. Relating this peak splitting to a magnetic field by the Zeeman effect, assuming a g-factor of 2, this results in $B \approx$ 2T. Upon increasing the magnetic field the peak-splitting decreases until it is fully compensated at the somewhat expected field value of B = 2T. Further increase of the external field splits the central peak once more into two peaks at finite bias values.

In the line traces also a finite background conductance is seen, upon which the Kondo peaks sit. This feature is not expected in a sequential tunneling approach, from which zero conductance inside the Coulomb diamonds is expected. Taking higher order tunneling processes into account, contributions from co-tunneling and the Kondo effect are expected.

Both effects are observed experimentally and are accurately reproduced by the numerical data in figure S1 (b). The finite peak splitting and its compensation at the corresponding magnetic field agree very well for the appropriate set of parameters that were inferred from the experiment. Also the finite background conductance is reproduced by the model and is due to the slow logarithmic decay of spectral weight in the 'perturbative regime', i.e., where $G(V) \sim 1/\ln^2(V/T_K)$ for $V > T_K$.

Finally, we remark that the experimental data may also contain some contributions from co-tunneling through excited dot states that are not included in our theoretical model.

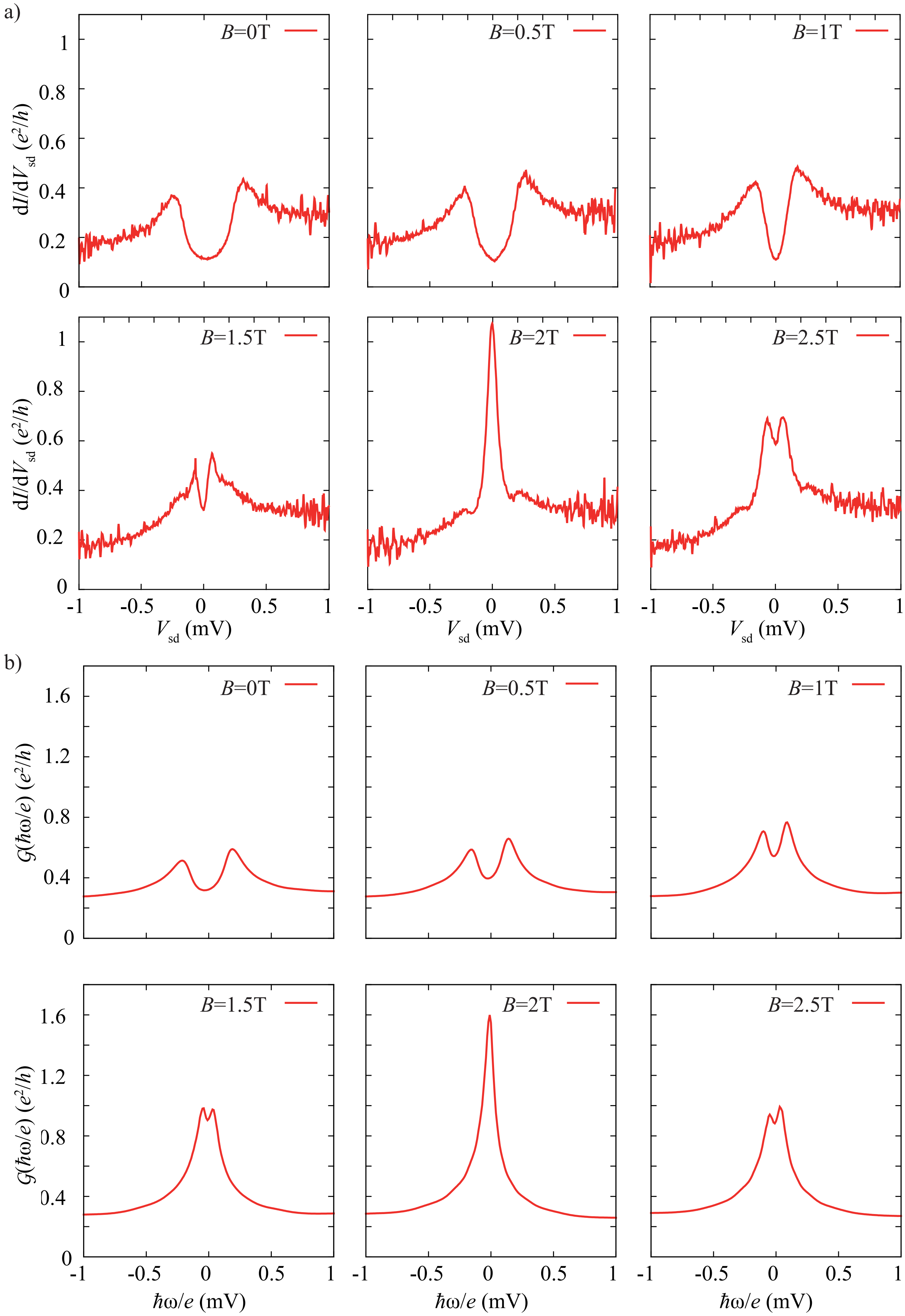

FIG. S1. Each panel shows a line cut through the data from a corresponding panel from Fig. 2 of the main text. (a) Experimental results for $\mathrm{d}I/\mathrm{d}V$ as function of V_{sd}, for V_{gate} fixed at the center of the Coulomb diamond. The background conductance from which the Kondo peak emerges is caused by an overlap of the logarithmic decay of the Kondo effect from the dominant level and co-tunneling contributions from other levels. (b) NRG results for the equilibrium spectral function $\mathcal{G}$ as function of $\hbar\omega/e$, for n_g fixed at the center of the Coulomb blockade diamond. The general lineshape of the measured peaks as well as the evolution of their splitting is reproduced with good agreement.