isotropic Heisenberg exchange interaction a strong shape anisotropy which can be probed by in-plane, perpendicular and oblique magnetic fields. The richness of possible magnetic phases is demonstrated by mean-field calculations which provide all essential spin patterns, but lack to describe the critical behavior correctly at the phase boundaries. The spin pattern changes from a pure antiferromagnetic and a canted phase to more complicated one if the magnetic field is tilted from the plane to oblique angles.

P-FKP15 : High frequency response of open quantum dots

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We investigate the response of the transport through open quantum dots to millimeterwave radiation (up to 55 GHz). In the low-field region (< 1T) the behaviour of the electrons in the dot can be treated in a semi-classical picture in terms of the trajectories of the electrons moving through the dot. For example, an electron following a quasi-triangular trajectory, after two bounces in the dot, can exit the dot at its entrance causing a backscattering peak in the resistance at a certain magnetic field. The dot systems are defined using finger gate structures on top of a 2DES in a AlGaAs/GaAs heterostructure. The 2DES has a carrier density of 2.5 10^{11}cm^{-2} and a mobility of 1.2 10^{6}cm^{2}/Vs. By applying a sufficiently negative voltage to the gates the 2DES is split into two regions connected only by a dot-like region (about 350 nm diameter) between them. The DC data exhibit backscattering peaks at fields of a few tenth of a Tesla. Shubnikov-de-Haas (SdH) oscillations appear above 0.5 T. While the SdH oscillations show the usual temperature dependence, the backscattering peaks are temperature independent up to 2.5 K. The backscattering peak shows a reduction of 10 percent due to the millimeterwave irradiation. However, due to the temperature independence of this peak, this reduction cannot simply be attributed to electron heating. This conclusion is supported by the observation of a strong frequency dependence of the reduction of the peak height. Work supported by EU (TMR-project FMRX-CT98-0180) and FWF, Austria (project P15513).

P-FKP16 : Temperature scaling of the quantum Hall effect in the absence of spin splitting

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The quantum Hall effect is determined by the localization of Landau level states. Here we study the localization in the absence of spin splitting of the Landau levels.
The scaling theory describes the quantum Hall effect (QHE) in terms of an energy-dependent localization length $\xi \propto \delta E^{-\mu}$. δE is the energetic distance of a state to the center E^* in a disorder-broadened Landau level. States around the center within a width ΔE determined by $\xi > L_{eff} \propto T^{\alpha}$ (L_{eff} is an effective sample size) are effectively delocalized. The width $\Delta B \propto \Delta E$ of the σ_{xx} peaks between the QHE plateaus is therefore proportional to T^{κ}, $\kappa = \alpha/\mu$. Different exponents κ have been found in experiments for spin-split ($\kappa \approx 0.4$) and spin-degenerate σ_{xx} peaks ($\kappa \approx 0.2$) [1]. Lee and Chalker [2] have suggested that even in the absence of an observable spin splitting there are still two energies $E_{\uparrow,\downarrow}{}^*$ (separated by $\Delta_S(E)$) where ξ diverges. Therefore the range of delocalized states on the energy scale is increased by $\Delta_S(E)$.