Pudalov *et al.* Reply: In the recent Letter [1], we reported *direct* measurements of the spin susceptibility χ^* in Si-MOS samples and showed that χ^* increases gradually as the electron density n decreases. It remains finite at the critical density n_c of the apparent metal-insulator transition in 2D (2D MIT). In the preceding Comment [2], Kravchenko, Shashkin, and Dolgopolov (KSD) claim that our results (i) are consistent with their *indirect* data [3] and (ii) support their idea that χ^* tends to diverge at a density n_χ, which coincides with the critical density n_c for the 2D MIT in the sample studied in Ref. [3]. We disagree with their claims as explained below.

The manner in which the three sets of data are plotted in Fig. 1 of Ref. [2] obscures the important systematic difference in the density dependences of $\mu_B B_c \equiv \pi\hbar^2 n\mu_B/(g^*m^*) = 0.63n(2m_b/g^*m^*)$ meV, where n is in 10^{11} cm^{-2} and $g^*m^* \propto \chi^*$ [1]. Our data alone are replotted in Fig. 1 in the same units. At $n \leq 2\times 10^{11}$ cm^{-2}, there are clear deviations from the KSD conjecture $B_c \propto (n - n_\chi)$ [3]. Our data remain *finite* at $n = 8\times 10^{10}$ cm^{-2}, where χ^* is thought to diverge [3]. The upper estimate $g^*m^*/2m_b \approx 7$ at $n = (7.7\text{–}9)\times 10^{10}$ cm^{-2} is obtained from the phase of Shubnikov–de Haas (SdH) oscillations; for bigger g^*m^* values, the phase would change by π in contrast to our observations [4]. Thus, we find a significant difference between our data and those of Ref. [3]. Clearly, the search for possible critical behavior of a nonlinear function $1/\chi^*(n)$ requires more careful consideration, for even the critical range of n is unknown; in Ref. [4] we concluded that divergence of χ^* is unlikely at $n > 5\times 10^{10}$ cm^{-2}.

By extrapolating $1/\chi^* \to 0$, KSD made a conclusion of a spontaneous spin polarization of mobile electrons (the

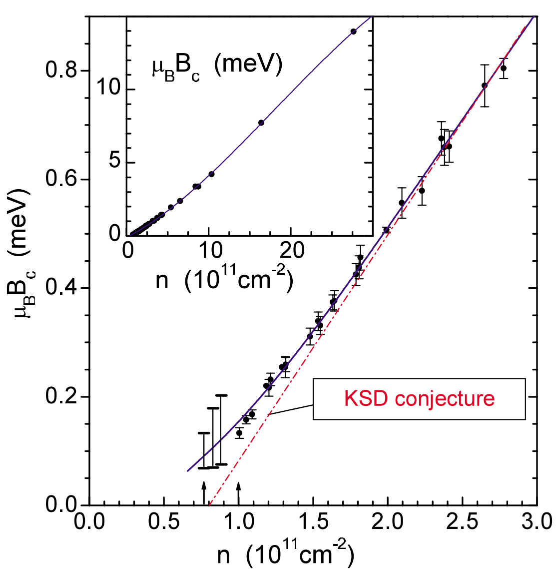

FIG. 1 (color online). $\mu_B B_c$ plotted vs n using direct $g^*m^*(n)$ data [1,4]. The solid line is a guide to the eye. Arrows depict $n = n_c$ for samples Si6-14 and Si5. The dash-dotted line represents the KSD conjecture [2].

"ferromagnetic instability") at $n = 8\times 10^{10}$ cm^{-2}. The absence of any traces of such instability in our SdH data at $n = n_c$ (1×10^{11} cm^{-2} for Si6-14) was attributed by KSD to a stronger disorder in our samples. However, the SdH data for sample Si5 clearly demonstrate the absence of a ferromagnetic transition at $n = 7.7\times 10^{10}$ cm^{-2} and allow one to estimate the spin polarization at this n to be less than 15% (Fig. 3 of Ref. [4]).

The difference between our results and those of KSD might be due to the following reasons: in Ref. [1], $\chi^*(n)$ is determined from SdH oscillations in *weak* crossed magnetic fields from the difference in the spin-up and spin-down populations. This approach is based solely on Landau quantization and provides *direct* results, which hold for arbitrarily strong interactions. In contrast, the data of Ref. [3] are indirect and based on a conjecture that the magnetoresistance (MR) in *strong* in-plane fields ($g\mu_B B_\parallel \lesssim E_F$) scales as $1/\chi^*$. We have shown [5] that the MR depends not only on n, but also on the history-dependent disorder in a sample. The effect of disorder on the MR becomes especially strong at high resistivities $\rho \sim h/e^2$. Thus, attributing MR solely to the spin polarization of mobile electrons is dangerous, at best.

The KSD concern about applicability of the Lifshits-Kosevitch (LK) formula to strongly interacting systems has been addressed in Ref. [6]. It was shown that the LK formula with renormalized g^* and m^* holds for arbitrarily strong interactions provided the system remains Fermi liquid and the amplitude of oscillations is small.

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