Litvinov and Dugaev Reply: The Comment [1] contains statements that require discussion. The statements are as follows:

(i) The Litvinov and Dugaev (LD) Letter [2] indicates the Bloembergen-Rowland (BR) mechanism [3] is responsible for ferromagnetism in III-V(Mn) materials. That is incorrect since Larson has proved that the BR contribution in semiconductors is small and irrelevant.

(ii) In nondegenerate magnetic semiconductors, the magnetic coupling (if not due to the BR mechanism) is due only to superexchange. Larson *et al.* [4] have shown that superexchange, involving two holes, is antiferromagnetic. Although they discussed particularly the case of II-VI compounds, these conclusions are general and remain valid for the III-V system.

(iii) The LD Letter claims that the hole density is too small. However, experimental data clearly indicate the existence of carriers in GaMnAs. The 5% doped GaMnAs clearly exhibits metallic behavior.

(iv) As we further increase the doping, the superexchange term is suppressed, while RKKY coupling strongly increases and becomes dominant. This scenario is confirmed experimentally.

(v) In the LD Letter, T_c is proportional to J_{pd}^2. This relation cannot be correct in the strong coupling limit.

We believe that Statement (i) stems from a terminology misunderstanding. The indirect exchange interaction discussed in the LD Letter is not the BR mechanism discussed by Larson *et al.* [4]. It is of "BR-type" in the sense that both mechanisms rely on virtual excitations between given energy levels and could exist in crystals with no carriers in the valence and conduction bands. However, the energy states involved are different, which makes the magnitude of the interaction different. The original BR mechanism is caused by electron-hole excitations across the band gap, that produce a small BR indirect interaction, which becomes exponentially smaller as the band gap increases, and almost irrelevant when the magnetic state is considered. The LD Letter discusses the mechanism associated with the virtual transitions between the valence band and a narrow impurity band created by Mn in GaAs. The mechanism of indirect exchange via Mn impurity-valence band excitations was also discussed in Ref. [5].

Statement (ii) concerns diluted magnetic semiconductors, where the Fermi energy lies in the band gap (no RKKY coupling). The comment that states the coupling between magnetic impurities is due only to a superexchange mechanism does not seem correct. There are the double exchange mechanisms, and also another one indicated in the LD Letter. Superexchange dominates for two close Mn ions located in neighboring positions. For two magnetic ions at a larger distance, the superexchange is much weaker than the interaction discussed in the LD Letter. Besides, similarity between II-VI and III-V semimagnetic compounds is strongly exaggerated. The situation with III-V semiconductors is unique because shallow acceptor levels are induced by magnetic dopants.

As for Statement (iii), in our Letter [2] we point out that the presence of holes in GaMnAs does not necessarily mean that the gas of holes is degenerate. For RKKY coupling to exist, it is necessary to have degenerate carriers where $E_F \gg k_B T$. No doubt about the RKKY mechanism would arise if ferromagnetism was observed in metallic samples only. However, it was also observed in 1.5%–2% Mn samples with no metallic behavior. Also, ferromagnetism in wide band-gap materials such as GaN(Mn,Fe,Co), which are far from a metallic state, bring into question its RKKY origin.

Statement (iv) is confirmed experimentally in II-VI(Mn) where nitrogen doping provides the source of carriers and where the magnetic component can be changed independently. In bulk GaAs(Mn) samples, this scenario is not confirmed experimentally since Mn doping increases the carrier density and the magnetic atoms density simultaneously. Both factors increase the critical temperature. Of course, the RKKY-related contribution plays a role in metallic samples, but the magnetization in low carrier density GaAs(Mn) samples exists in spite of the antiferromagnetic superexchange contribution. A possible reason is the mechanism proposed in the LD Letter.

As mentioned in Statement (v), we used a perturbative expression for T_c. Our expression for T_c cannot be used in the strong coupling limit. The strong coupling limit was not an objective of the LD Letter. The problem of a strong coupling limit includes consideration of the Kondo effect, localization corrections, and strong localization with the metal-insulator transition, and it was not solved so far.

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