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**Unexpected impact of magnetic disorder on multiband superconductivity** DMITRI EFREMOV, IFW- Dresden, Germany, MAXIM KORSHUNOV, Kirensky Institute of Physics, Krasnoyarsk, Russia, ALEXANDER GOLUBOV, University of Twente, The Netherlands, OLEG DOLGOV, Max Planck Institute, Stuttgart, Germany — We analyze how the magnetic disorder affects the properties of the two-band  $s_{\pm}$  and  $s_{++}$  models, which are subject of hot discussions regarding iron-based superconductors and other multiband systems like  $\text{MgB}_2$ . We show that there are several cases when the transition temperature  $T_c$  is not fully suppressed by magnetic impurities in contrast to the Abrikosov-Gor'kov theory, but a saturation of  $T_c$  takes place in the regime of strong disorder. These cases are: (1) the purely interband impurity scattering, (2) impurity scattering purely in one of the bands, (3) the unitary scattering limit. We show that the a transition between  $s_{++}$  and  $s_{\pm}$  states may occur with increasing magnetic disorder.

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