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Electron irradiation of iron-based superconductors S. DEMIRDIS, C.J. VAN DER BEEK, M. KONCZYKOWSKI, Laboratoire des Solides Irradiés, CNRS UMR 7642 & CEA-DSM-IRAMIS, Ecole Polytechnique, F-91128 Palaiseau cedex, France, S. KASAHARA, T. TERASHIMA, Research Center for Low Temperature and Materials Sciences, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan, R. OKAZAKI, T. SHIBAUCHI, Y. MATSUDA, Department of Physics, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan, D. COLSON, Service de Physique de l'Etat Condensé, L'Orme des Mérisiers, CEA-DSM-IRAMIS, F-91198 Gif-sur-Yvette, France, P. GIERLOWSKI, Institute of Physics of the Polish Academy of Sciences, 32-46 Aleja Lotników, R. PROZOROV, The Ames Laboratory, Ames, Iowa 50011, USA Department of Physics & Astronomy, Iowa State University, Ames, Iowa 50011, USA — The premise of $s_{\pm}$ superconductivity in the multiband iron-based superconductors, with a sign-changing order parameter between the electron-like and hole-like Fermi-surface sheets, has raised the question of the effect of atomic-scale point-like disorder on superconductivity in these materials. In this contribution, we compare the effect of the controlled introduction of point-like defects in different 122-type iron-based superconductors by 2.5 MeV electron irradiation at 20 K. Preliminary data reveal that the effect point-like defects on the critical temperature of isovalently doped materials vastly outweighs that on the charge-doped compounds. The weak collective contribution to J_c in Co-doped 122 compounds is found to clearly increase. Moreover this contribution appears after irradiation of the P-doped compound in which it was previously absent.

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