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Fe pnictides in high magnetic fields.¹

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High magnetic fields provide invaluable tool in probing such complex and phase-rich materials as novel pnictide superconductors, where upper critical field estimates surpass 100 Tesla for some of the compositions. We have investigated a number of tertiary and quaternary iron pnictides in pulsed magnetic fields exceeding 60 T and will present the latest data on their superconducting and normal state properties at high fields. We probe the importance of reduced dimensionality for high temperature superconductivity across different families of pnictides, where we find contrasting behavior between 122 and 1111 compounds. We find clear signature of the Fermi surface reconstruction in magnetotransport properties of the field-induced normal state, which coincides with reported structural and magnetic phase transitions.

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