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Superconducting magnets for SIS100 and Super-FRS at FAIR –overview and progress

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At the FAIR project in Darmstadt, Germany, superconducting magnets will be utilized for the main accelerator, the SIS100 heavy ion synchrotron, and for the fragment separator Super-FRS. For SIS100, the magnets are fast ramped with a rate of up to 4 T/s while large apertures are required for Super-FRS. In total, several hundred magnets need to be produced, qualified and characterized for the operation at FAIR. For both machines, series production is ongoing and testing programs at operational conditions have been established for quality assurance of the high demanding magnet modules.

In the presentation, an overview is given on the design and operation principles of the various magnet types and module combinations. The complex project landscape involving several sites for production, module integration, and cold testing is pictured. The project progress and key testing results are highlighted and an outlook for the installation and commissioning plans at FAIR is given.

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