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Ion sources for FAIR - Facility for Antiproton and Ion Research at Darmstadt, Germany

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FAIR (Facility for antiproton and ion research) is a new accelerator complex in Darmstadt, Germany which will come into operation 2027. The existing GSI accelerator will serve as an injector for the FAIR facility. GSI comprises three main injector lines equipped with different kinds of ion sources producing ion beams of a large number of gaseous and metallic elements according to the various requirements of different experiments. The south injector is equipped with Penning type ion sources (PIG) for metallic and gaseous ion production delivering ion currents up to 100 μA and charge states of up to 8+. The north injector is equipped with high current ion sources of the multicusp type (MUCIS, CHORDIS) and the vacuum arc type ion source VARIS. With this kind of ion source we are able to deliver ion beam currents of up to several mA of up to 5+ charged ions. The third injector is the high charge state injector equipped with a 14.5 GHz ECR ion source delivering ion beam currents of up to 100 μA and charge state of up to 20+ of gaseous and metallic ions. This paper gives an overview of all the ion beams produced by these ion sources and the most important operational parameters

Footnotes

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