Performance of RF-Driven Negative Ion Source for Neutral Beam Injection in SWIP

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Abstract:

RF-driven negative ion source with long life, low impurity and simple maintaining is idealistic one for neutral beam injection (NBI) for the future fusion reactor. A larger RF-driven negative ion source equipped single RF driven source has been developing since 2018 in SWIP. Beam energy of 202keV, accelerated current of 13A and duration time of 1000s have been achieved successfully. Extracted current density (hydrogen) is upon 317A/m^2 at Cesium seed. At present, a larger RF negative ion source equipped four RF driven sources is being built and the results is expected.

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