

Current activities on the rf-system for the proton accelerator facility at PSI

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At PSI, protons are accelerated up to an energy of 590 MeV by two separated sector cyclotrons, the Injector 2 and the Ring. Since 2008 the Ring cyclotron is running with 4 copper cavities. By increasing the cavity voltage to 850 kVp the number of turns was reduced and the beam current is increased up to 2.4 mA, which results in a beam power of 1.4 MW.

In 2010 the regular operation suffered from arcing and plasma in the Ring cyclotron. The story ended up in cleaning of cavity surfaces and differential tuning systems for cavity number 3 and flattop cavity to reduce the radiated rf power. The cleaning and results of the new tuning systems will be shown.

An upgrade program of the Injector 2 rf-system will replace the flattop cavities (150 MHz) by accelerating cavities (50 MHz). The new cavities are manufactured and the first one was tested under power. Issues such as cavity power test, tuners, and finger contact tests will be presented.

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