



Contribution ID: 25

Type: **not specified**

Cryogenic waste heat utilization for DESY and European XFEL

Thursday 24 October 2013 11:20 (20 minutes)

High energy research facilities like DESY and European XFEL have considerable power consumption. 85 % of the power consumption is electricity and 15 % heating. Electricity is used for the accelerator subsystems like rf power, cryogenic plant, magnets and cold water production. They produce waste heat which is often blown into the atmosphere without using it for heating and air conditioning. The rising energy costs and the energy turnaround make it necessary to look after the whole energy budget. The often asked question is how to reuse the waste heat from accelerators and feed it into a heating system.

Since 20 years DESY reuses a part of the waste heat from the HERA cryogenic plant. The waste heat from the oil cooler is feed into the DESY heating network. 2 of 3 helium liquefaction lines will supply the XFEL injector and the linac tunnel. Over a long time data have been collected from the cryogenics group MKS and the energy supply group MKK. For this investigation of feeding the heat into the DESY heating network a simulation in Matlab/Simulink is developed. The results show that there is a good potential for using waste heat of a cryogenic plant for heat utilization.

Presenter: Mr JENSEN, Jens-Peter (DESY)

Session Classification: Energy Efficiency at Research Infrastructures