MATTER AND TECHNOLOGIES

Contribution ID: **35** Type: **Poster without speed talk**

Cryogenic surfaces in the Room Temperature SIS18 Ion Catcher

Cryogenic surfaces in UHV enviroments add a massive pumping speed, due to their high sticking probability. The usual probelm with cold head cooled surfaces in UHV-chambers is, that the cold head can not be baked. A device has been developped, which allows to remove the cold head from the vacuum system, without breaking the vacuum to allow for bakeout. Such, cold head cooled surfaces can be used in conjuction with NEG surfaces, which need high activation temperatures.
For the heavy ion synchrotron SIS18 at GSI, a prototype ion catcher containing cryogenic surfaces has been developed and built. The surfaces are cooled by a commercial cold head, which easily allows this system being integrated into the room temperature synchrotron. The aim is to improve the dynamic vacuum conditions inside SIS18, which will be used as an injector booster synchrotron for SIS100 at FAIR operation. Simulations with cryogenic surfaces show promissing results. The high sticking probability of cryogenic surfaces prevents the vacuum system from pressure built-ups during operation with heavy ion beams.
The development, laboratory tests, and improvements of this system will be presented.

Speed Talks

I am unable/unwilling to give a speedtalk.

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