

# FIRST EXPERIMENTS AT THE CW-OPERATED RFQ FOR INTENSE PROTON BEAMS

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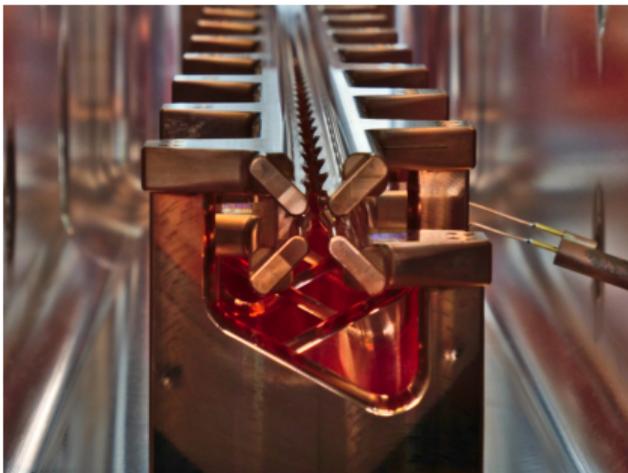
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# KEY DATA

FIRST  
EXPERIMENTS  
AT THE CW-  
OPERATED  
RFQ FOR  
INTENSE  
PROTON  
BEAMS

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- RFQ is part of the accelerator driven neutron source at Stern-Gerlach-Center (SGC)
- installed on the beam line and connected to the LEBT



## RFQ PARAMETERS

- 4-rod RFQ for  $H^+$
- frequency: 175 MHz
- 120 keV  $\rightarrow$  700 keV
- amplifier: up to 250 kW
- $I_B = 2 - 50$  mA,  
upgradable to 200 mA, DC

# ADVANCED RFQ DEVELOPMENTS

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A new generation of high power 4-rod RFQ.

- technology adopted by
  - MYRRHA
  - GSI/FAIR (see D. Koser: **TUPLR057**, right after this session)

## PARTICULAR FEATURES

- CW-operation
- high power ( $P_{FW, RFQ} \approx 110$  kW)
- sophisticated cooling of:  
stems, tuning plates, rods.
- inductive RF power coupling of the second part of the RFQ-IH combination

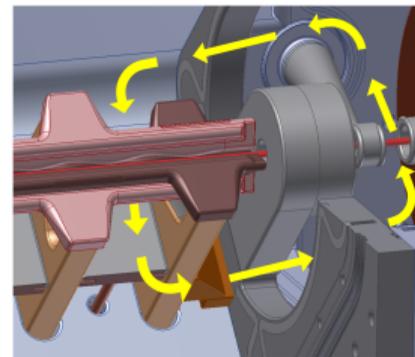


Image courtesy of M. Heilmann

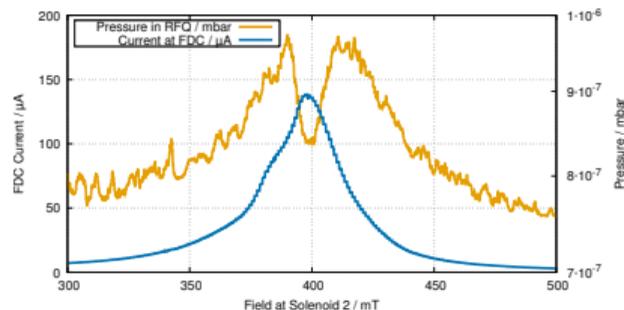
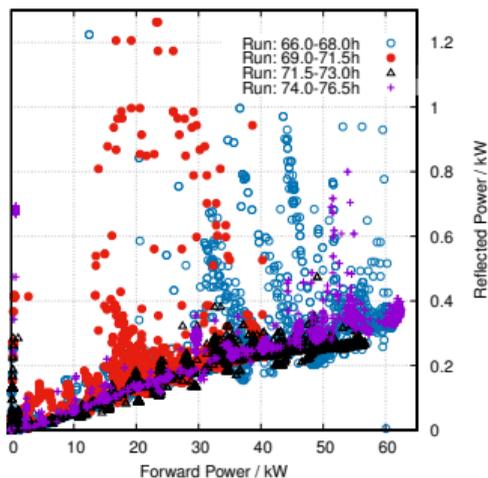
# MEASURES DURING CONDITIONING

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## CONDITIONING METHODS

- RF conditioning
- ion beam scrubbing



## MEASUREMENTS

- RF coupling
- vacuum pressure
- x-ray spectroscopy
- mass spectrometry
- transmission of scrubber beam

# VISIT (ME AT) THE POSTER BOARD

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In behalf of the whole project team from the groups:

- Experimental Astrophysics
- LINAC-AG
- NNP

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Thank you for your attention!

