

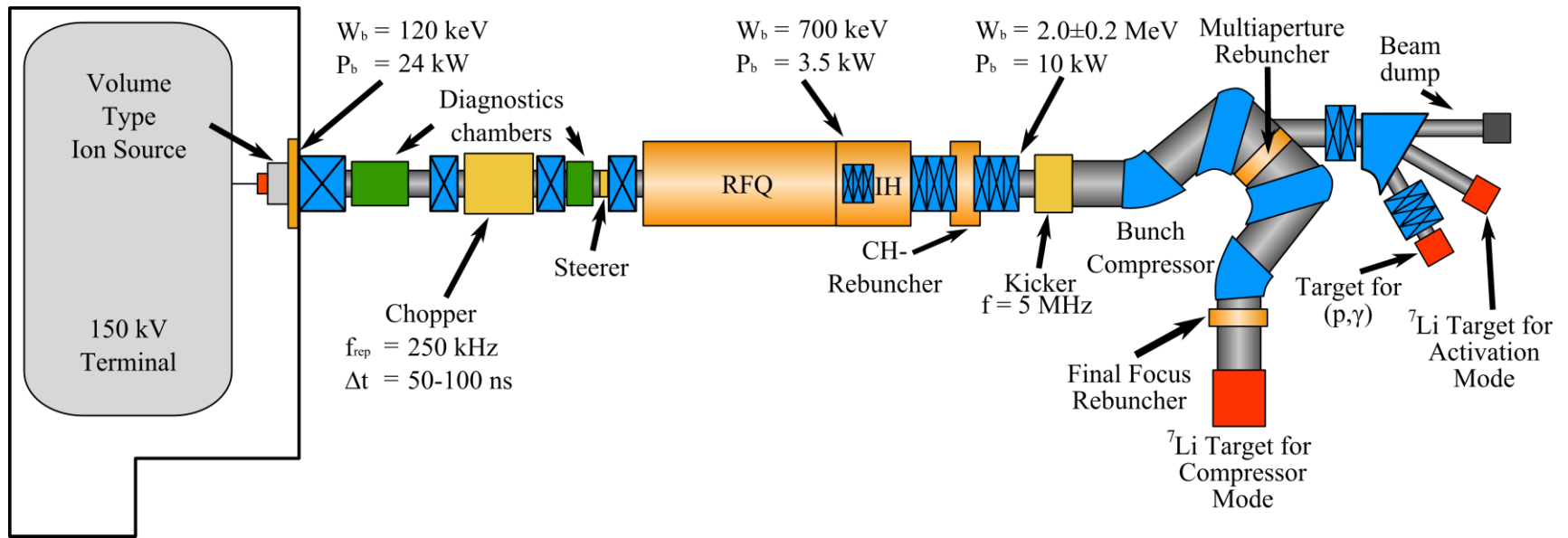
# Status of the Frankfurt Neutron Source

**Oliver Meusel**

HIC for FAIR Workshop

Riezlern

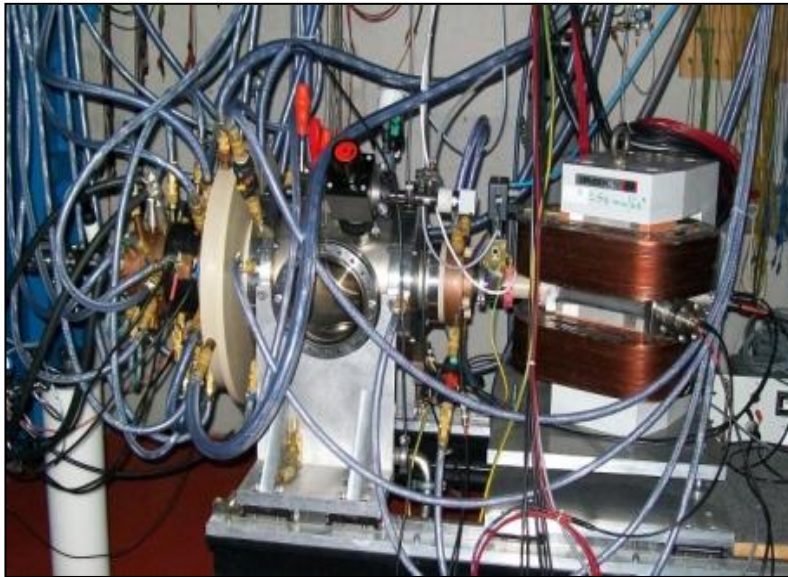
07/03/2011



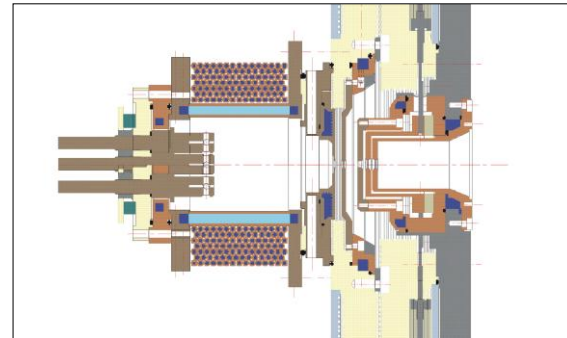
- FAIR relevance ?
- Accelerator test bench ?
- 200 mA ?
- Time line ?

Volk / Schweizer

## High Current Ion Source



Test Operation of Ion Source



Technical Drawing

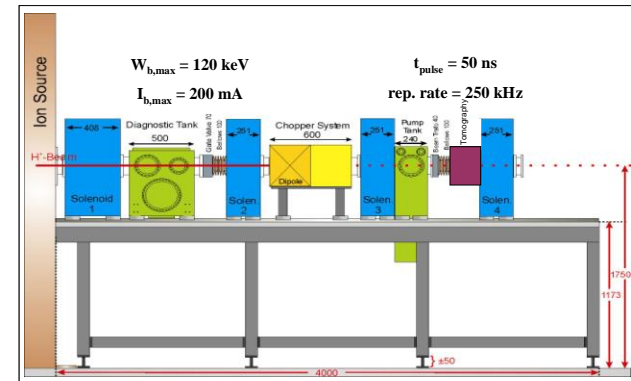
- Volume Type
- Hot Filament Driven Discharge
- Beam Current: 200 mA
- Proton Fraction: 90%
- Low Emittance

Wiesner / Dinter / Lotz

## Low Energy Beam Transport



View of LEBT Section

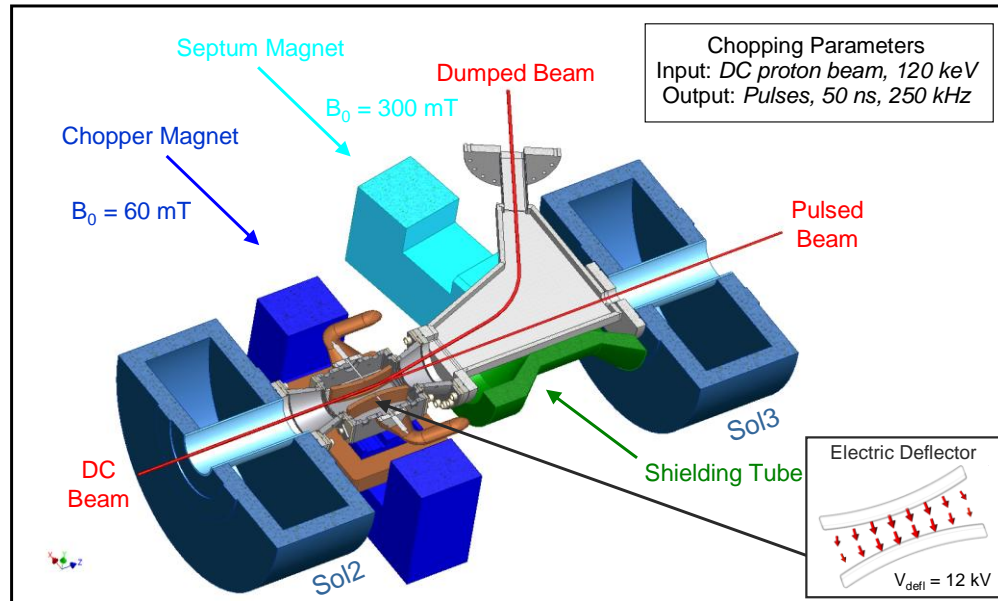


Schematic Drawing

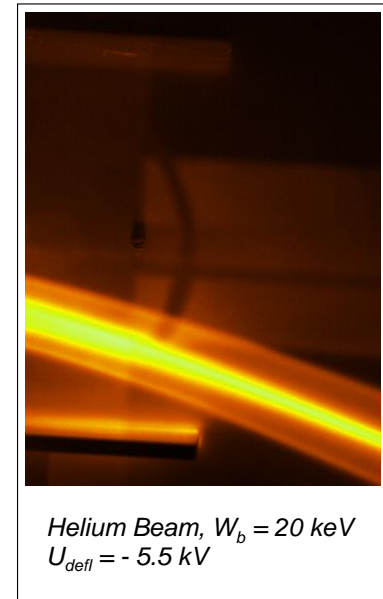
- Beam Energy: 120 keV
- Solenoid Lenses
- Space Charge Compensation
- Optical Non-Invasive Diagnostics

Wiesner / Dinter / Noll

## ExB Chopper System



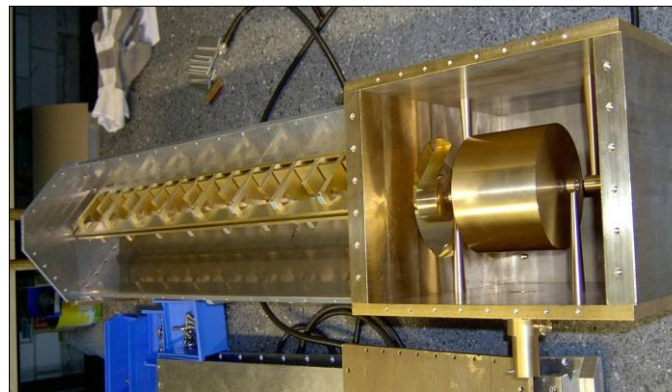
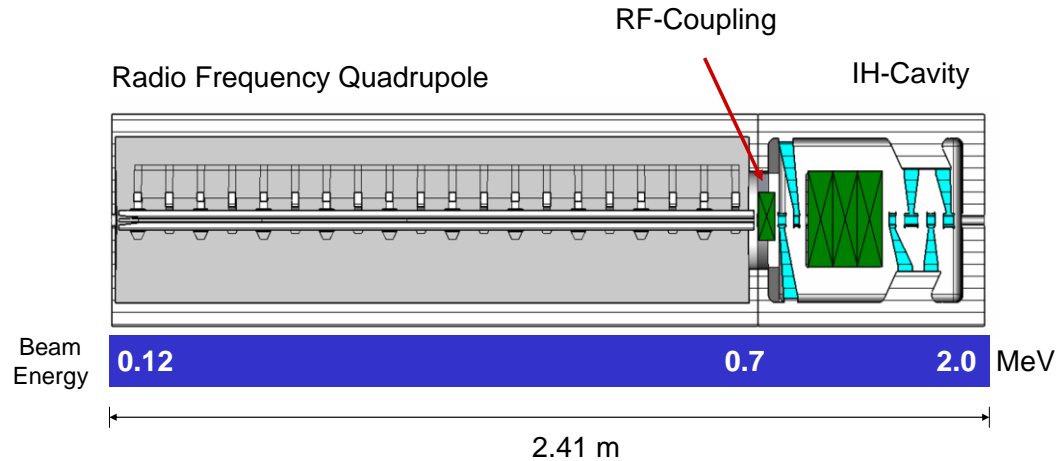
Scheme of ExB Chopper System



CCD Camera Image of Deflected Beam

Ratzinger / Heilmann / Mäder

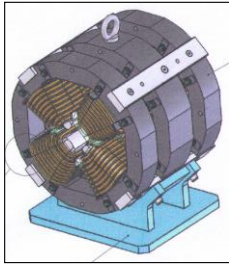
## Linac: RFQ-IH-Structure



Model for the Study of RF-Coupling in the RFQ-IH Accelerator Stage

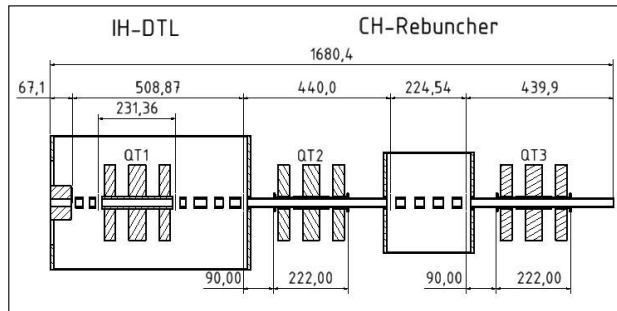
Podlech / Heilmann / Seibel

## Medium Energy Beam Transport

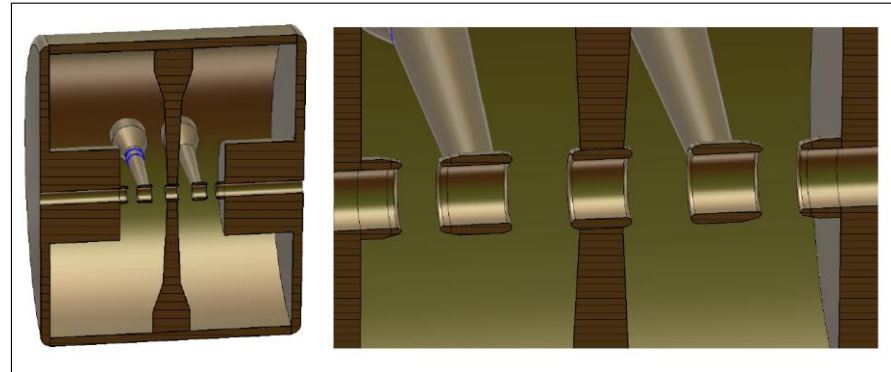


Magnetostatic  
Quadrupole Triplet for  
Transverse Focussing

- Beam Energy: 2 MeV  $\pm$  0.2 MeV
- 2 External Quadrupole Triplets
- Room Temperature CH - Cavity
- Phase Probe Beam Diagnostics

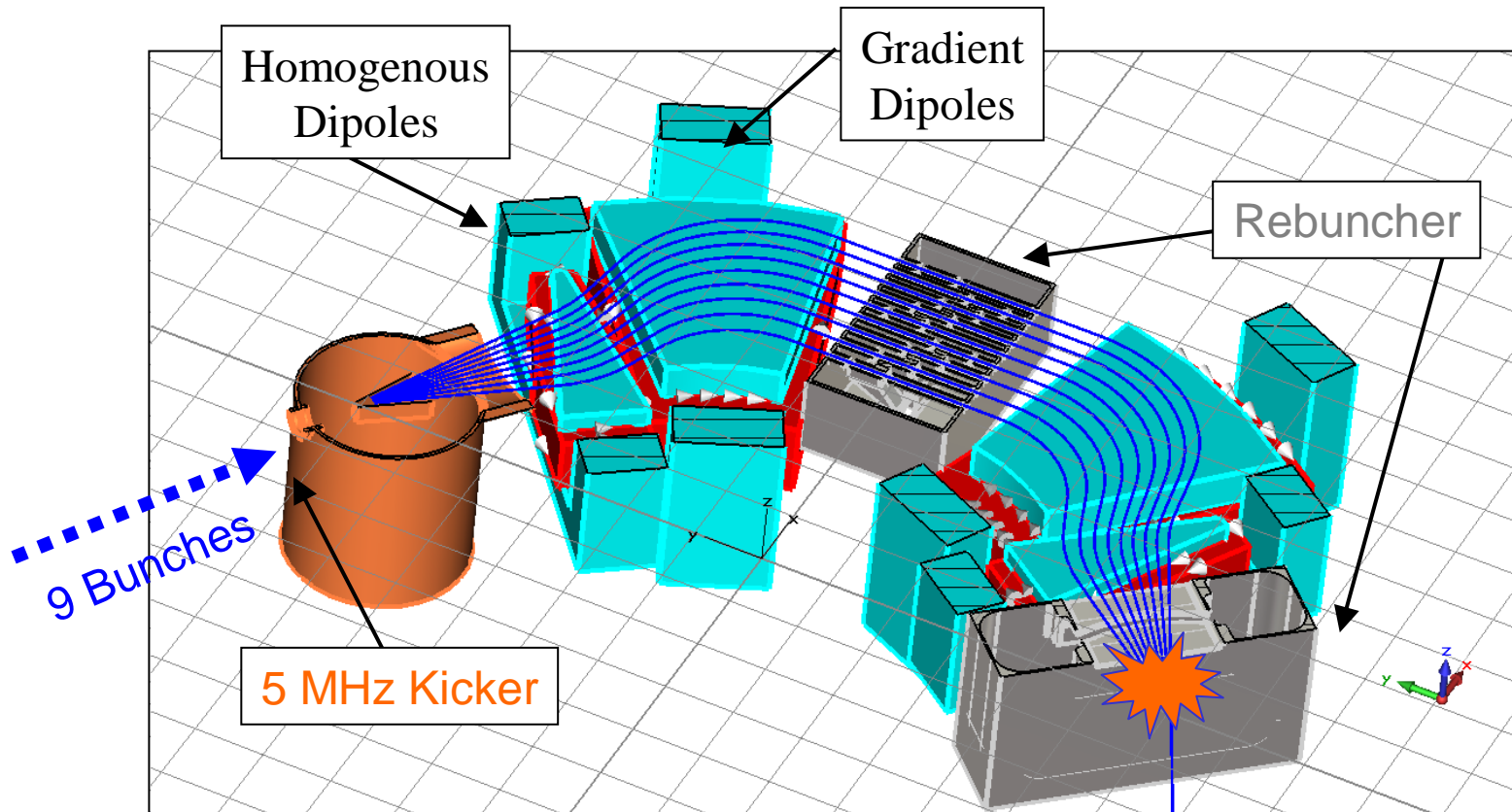


Layout of the MEBT Section



Cross Sectional View of the CH - Rebuncher Cavity

Chau / Noll / Podlech

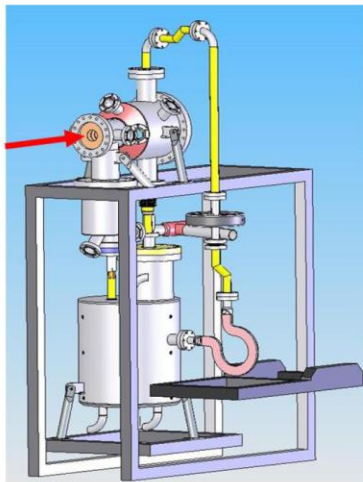
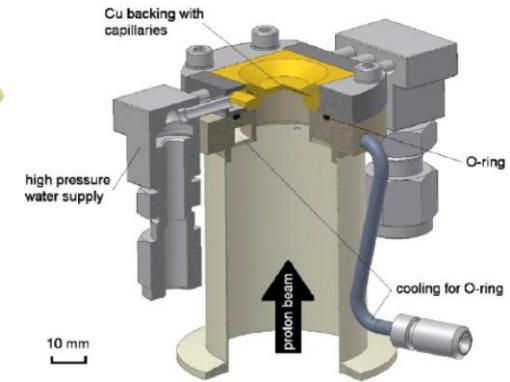
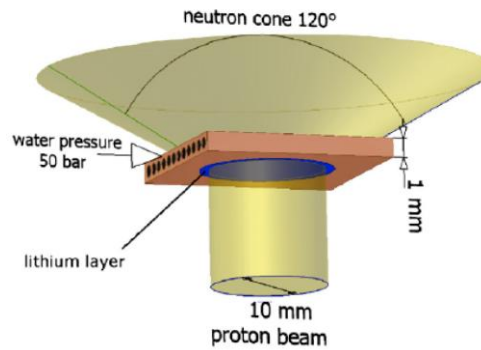
Towards Compression Ratio of  $\eta = 48$ Single 1ns Pulse  
at Li-Target



Deutsch-Israelische Stiftung für wissenschaftliche  
Forschung und Entwicklung (G.I.F.)

## Goethe University Frankfurt

### High Power Solid Li - Target



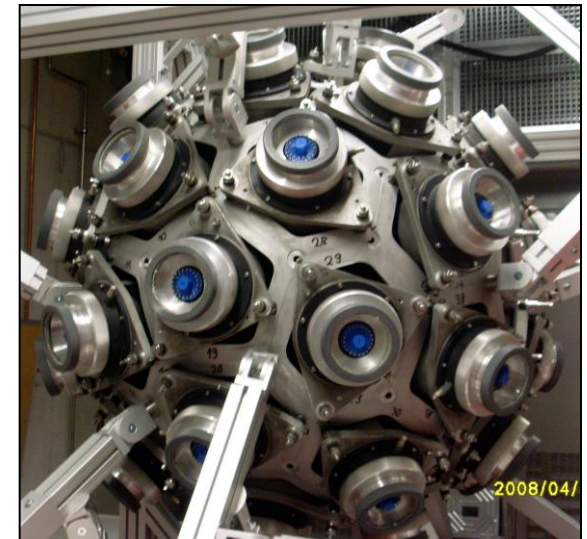
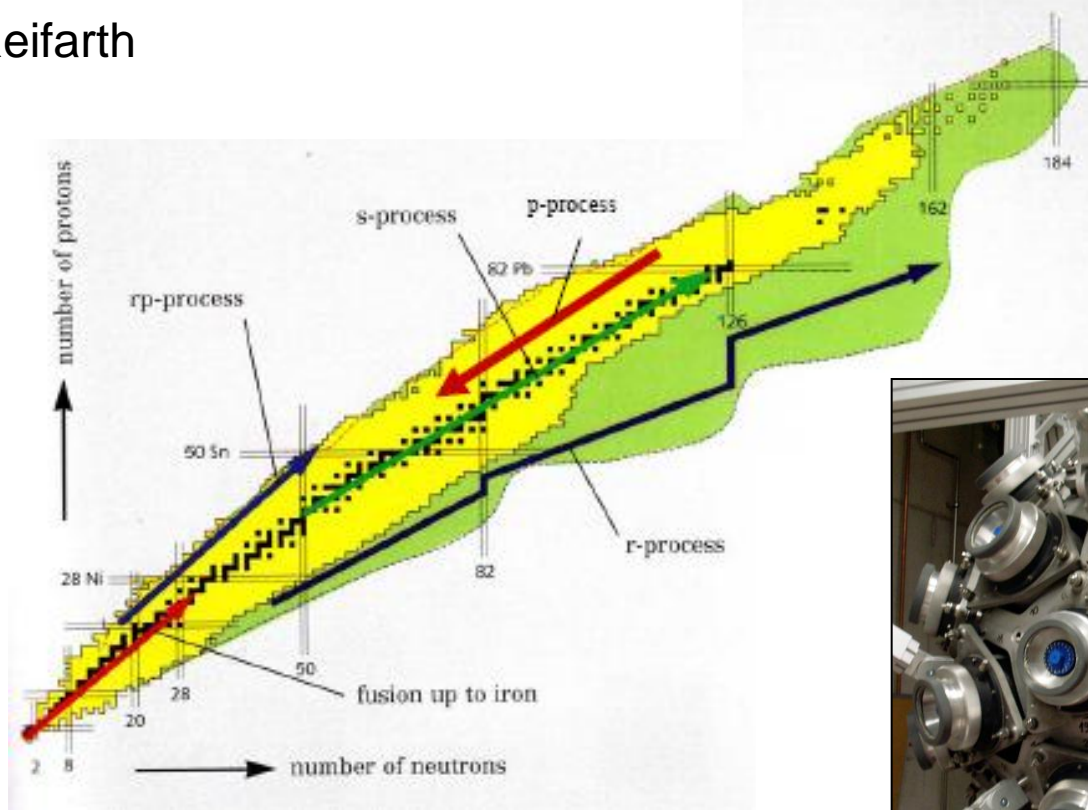
## Hebrew University Jerusalem

### High Power Liquid Li - Target

# Experimental Astrophysics



Prof. R. Reifarth



**NNP**

Non Neutral Plasma  
Physics Group

Thank you.