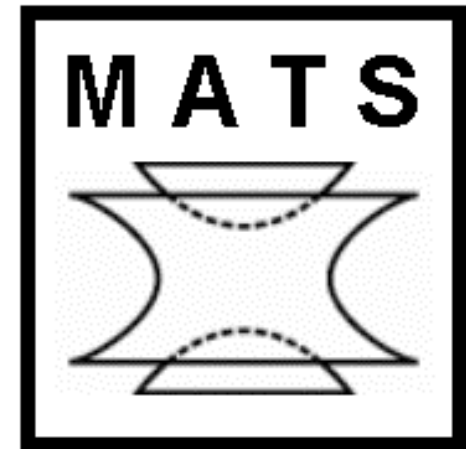


MATS Status Report - Measurements with an Advanced Trapping System

**Klaus Blaum for the MATS Collaboration
University of Mainz and GSI Darmstadt**

Outline

- Collaboration
- Experimental Setup
- Status Technical Proposal
- Money Matrix
- Problems



The MATS Collaboration



CSNSM-IN2P3-CNRS Orsay: G. Audi, D. Lunney, C. Guénaut

Universität Greifswald: A. Herlert, G. Marx, L. Schweikhard

Universität Erlangen-Nürnberg: P.-G. Reinhard

GSI-Darmstadt: M. Block, H. Geissel, F. Herfurth, Yu.A. Litvinov,
M. Matos, Yu. N. Novikov, C. Scheidenberger, M. Winkler

CERN/GSI-Darmstadt: A. Kellerbauer

Universität Mainz: K. Blaum, I. Bloch, S. George, C. Weber

Universität Gießen: W. Plass

University of Jyväskylä: J. Äystö, A. Jokinen, S. Kopecky, Iain Moore, A. Nieminen

LLNL-Livermore: D. Schneider

LMU München: D. Habs, S. Heinz, O. Kester, V. Kolhinen, J. Szerypo, P.G. Thirolf

MPI KP Heidelberg: J. Ullrich, J. R. Crespo López-Urrutia

University of Brussel: P.-H. Heenen

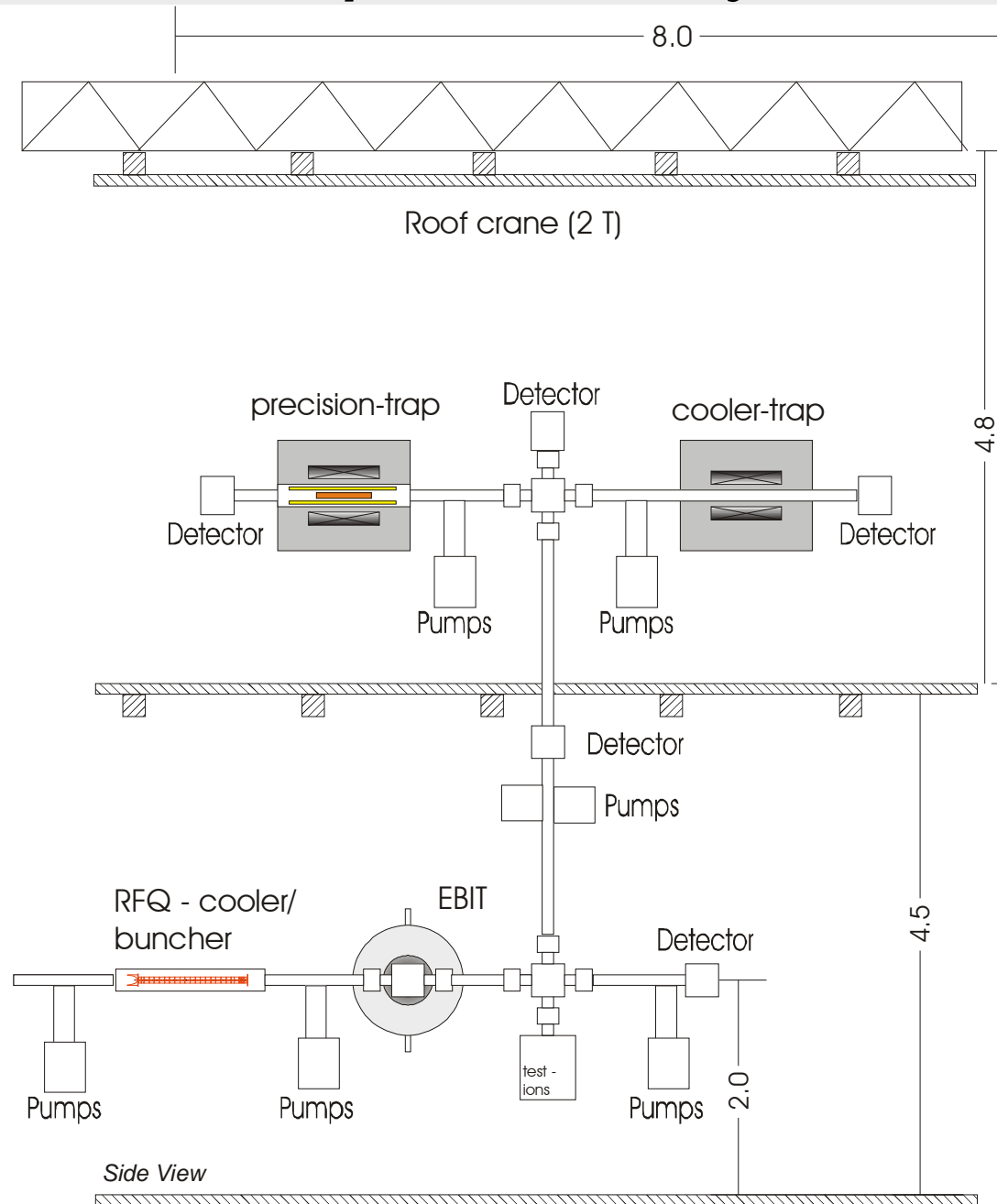
Seattle University: M. Bender

Stockholm University: T. Fritioff, R. Schuch

Kolkata India: Amlan Ray

**15 Institutes
40 Members**

Experimental Layout – Side View



Detectors:

- FT-ICR
- TOF-ICR
- Si(Li) electron

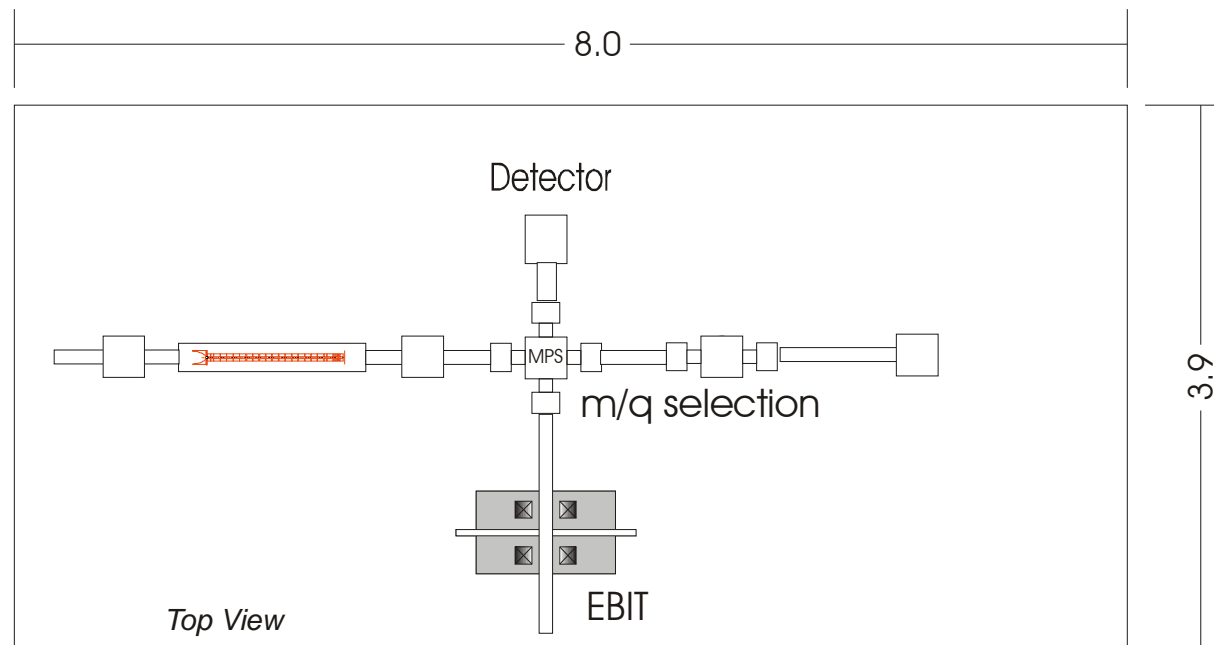
Precision trap:
measurements

Cooler trap:
beam preparation

q/m selection:
charge breeding

EBIT:
charge breeding

Experimental Layout – Top View



Space requirements:

$$L * W * H = 8\text{m} * 4\text{m} * 10\text{m}$$

- three superconducting magnets
- 10 standard full size 19" racks
(3 EBIT, 1 q/m sep., 5 traps, 1 detectors)
- Roof crane (1-2 T)
- Cooling water (16°): ~35-40 kW
- electronic power supplies (almost defined)
- gas system: defined

Spokesperson: Klaus Blaum (University of Mainz)

Deputy spokesperson: José Crespo (MPI-KP Heidelberg)

Project Manager: Frank Herfurth (GSI Darmstadt)

Contact Persons (MATS and LaSpec):

Data Acquisition: Michael Block (GSI-Darmstadt)

Detectors: Frank Herfurth (GSI-Darmstadt)

Simulations: à Beam Distribution

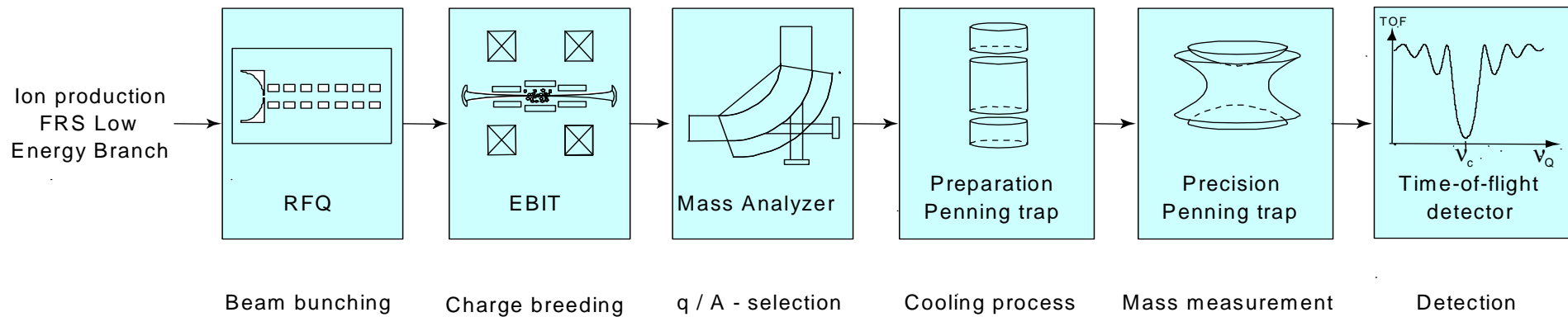
Ari Jokinen (University of Jyväskylä)

Iain Moore (University of Jyväskylä)

Peter Thirolf (LMU Munich)

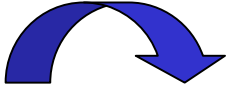
Christoph Scheidenberger (GSI Darmstadt)

Working and Writing Groups



- (1) EBIT: **Jose Crespo**, Tomas Fritioff, *Oliver Kester*, D. Schneider, Joachim Ullrich
- (2) q/A selection: *Tomas Fritioff*, **M. Block**, Sophie Heinz, Oliver Kester
- (3) Traps: **F. Herfurth**, *Alban Kellerbauer*, Stefan Kopecky, Gerrit Marx, Jurek Szerypo, Christine Weber
- (4) Detectors for mass spectrometry: Klaus Blaum, **Alexander Herlert**, *Christine Weber*, Sophie Heinz
- (5) Detectors for decay spectroscopy: Frank Herfurth, **Ari Jokinen**, Iain Moore, *Peter Thirolf*
- (6) Physics case: *Juha Äystö*, **Klaus Blaum**, Jose Crespo, Dieter Habs, Hans Geissel, Frank Herfurth, David Lunney, Yuri Novikov, *Christoph Scheidenberger*, *Lutz Schweikhard*, Peter Thirolf

Status Writing Groups:

- Ø **EBIT**: Report finished
 - Ø **q/A selection**: Report finished
 - Ø **Traps**: Report finished
 - Ø **Detectors for MS**: Report almost finished
 - Ø **Detectors for DS**: Report finished
 - Ø **Physics case**: Report in preparation
(isomeric separation, fine structure effects,
proton-neutron interactions and the new masses,
contribution to Standard Model tests)
- 
- A blue curved arrow pointing downwards and to the right, indicating a transition or continuation from the 'Physics case' section to the 'Overall report' section.
- Ø **Overall report**: in schedule, but still a lot of work to do

Responsibility / Money Matrix



Institute	Country	Responsibility	Obligations (k€)	Manpower (FTE)
University of Mainz	Germany	Trap system	???	???
GSI Darmstadt	Germany	Trap system, beamlines	???	???
CSNSM-IN2P3- CNRS Orsay	France	Buncher	???	???
University of Jyväskylä	Finland	Detector system spectroscopy	???	???
University of Greifswald	Germany	Detector system mass spectrometry	???	???
MPI-Heidelberg	Germany	EBIT	???	???
University of Munich	Germany	q/m separation, EBIT	???	???
University of Stockholm	Sweden	q/m separation, EBIT	???	???
University of Gießen	Germany	Detector system	???	???

Problems:

- 1) Template is not well suited
- 2) No definitive answers to the money matrix
- 3) TP ILIMA – MATS: comment to PAC
- 4) Time schedule