

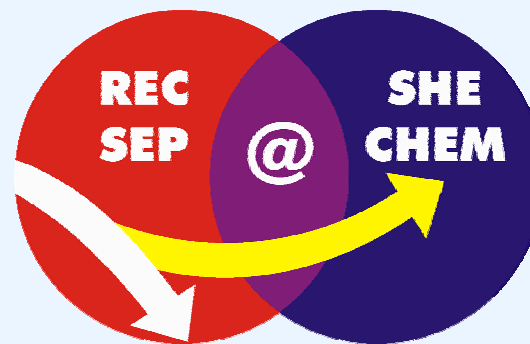
Status of **TASCA** – on overview

Matthias Schädel
GSI Darmstadt

TASCA 07

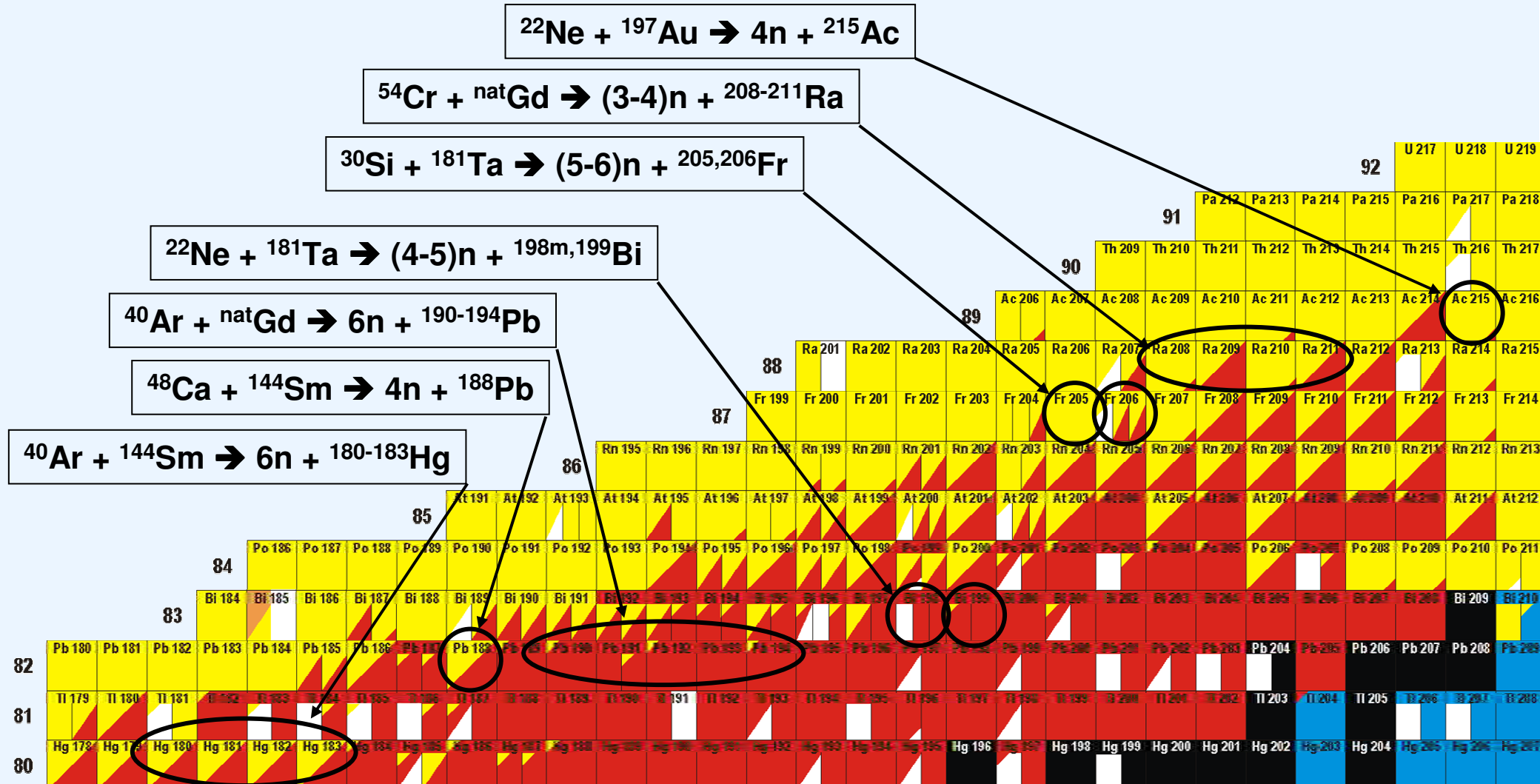
6th Workshop on
Recoil Separator
for
Superheavy Element Chemistry

September 28, 2007
Davos, Switzerland

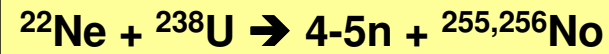


TASCA Commissioning Experiments: Nuclear Reactions

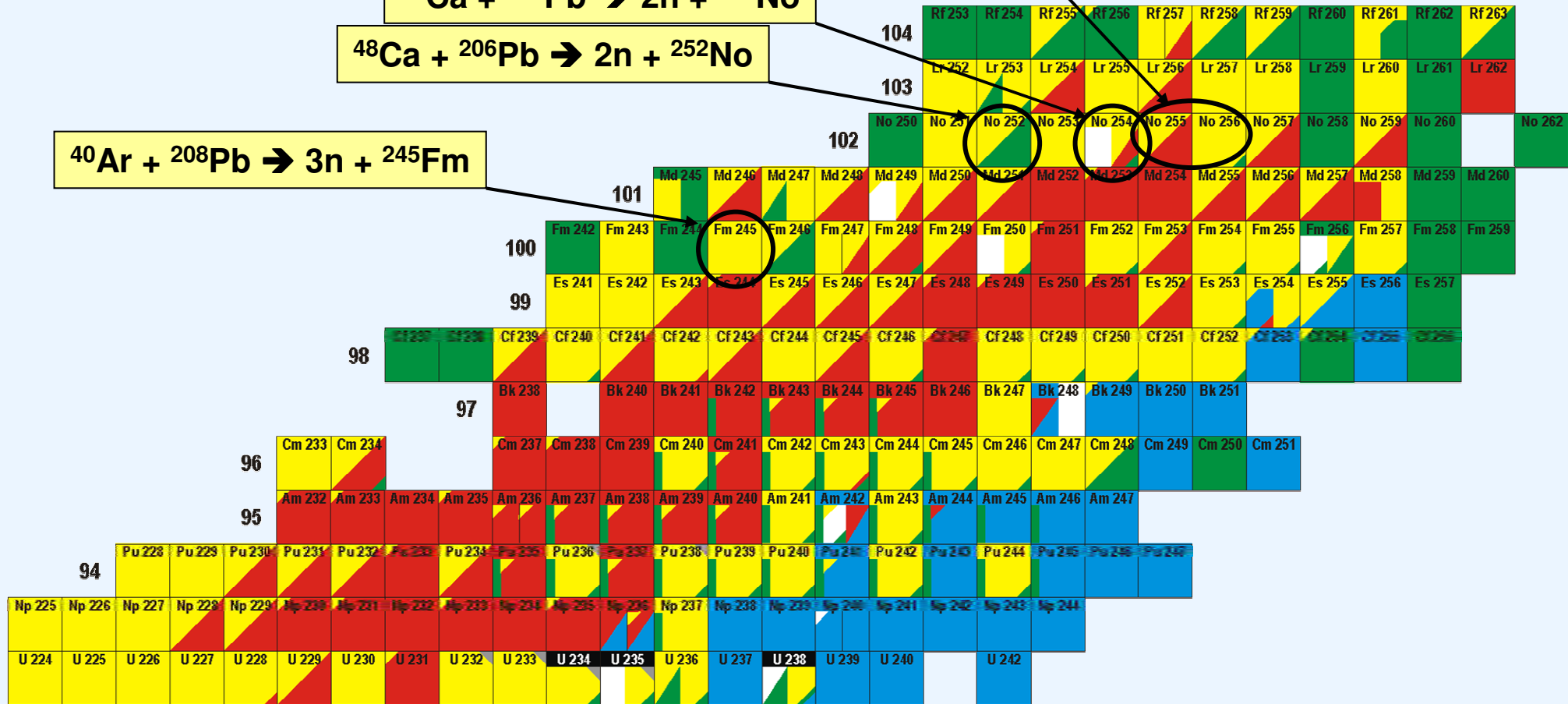
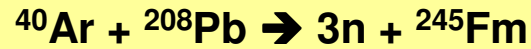
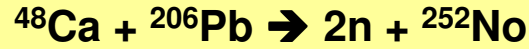
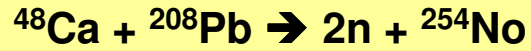
$Z_{CN} < 92$

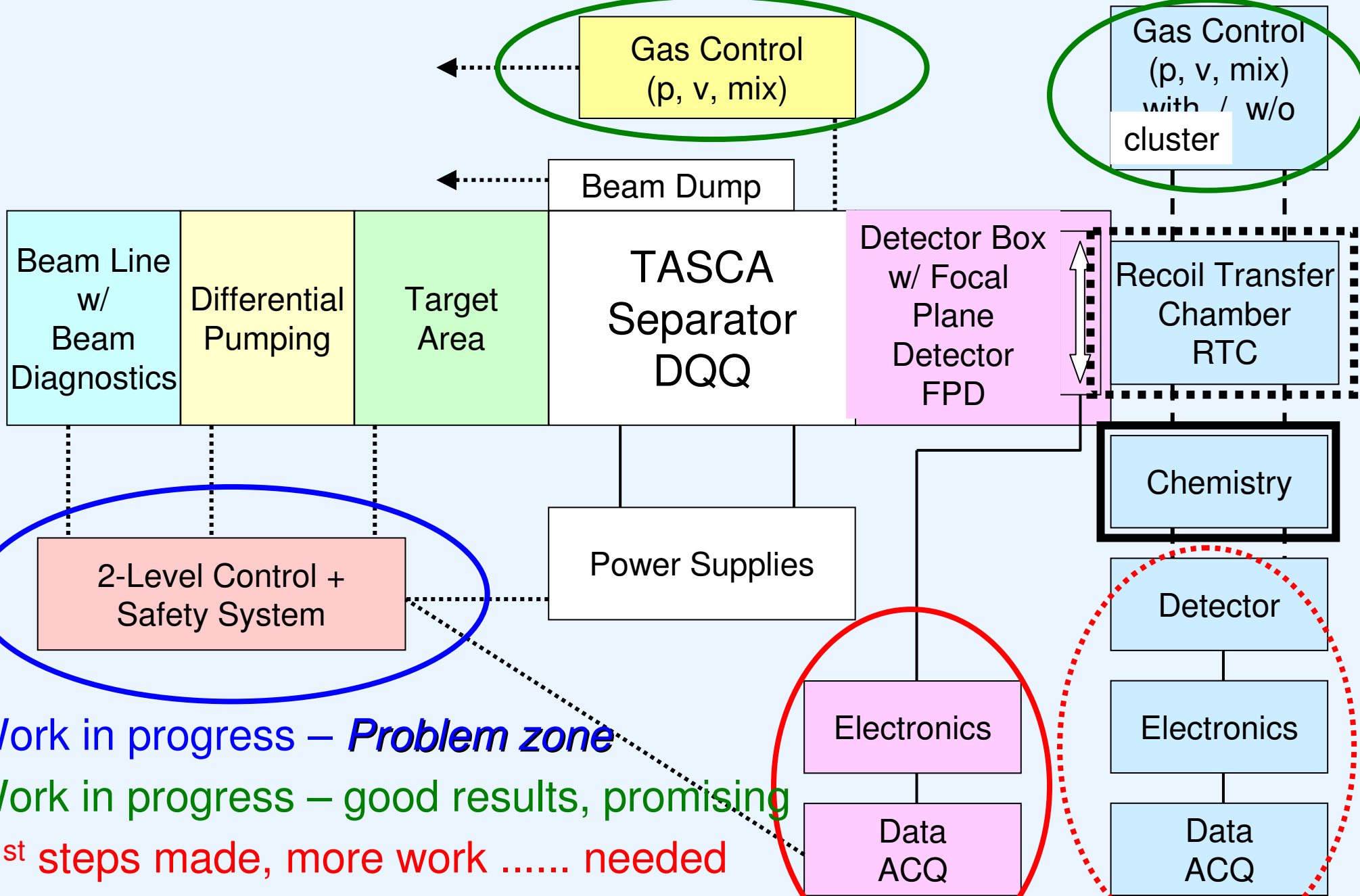


TASCA Commissioning Experiments: Nuclear Reactions



$Z_{\text{CN}} > 92$





Work in progress – *Problem zone*

Work in progress – good results, promising

1st steps made, more work needed

TASCA Commissioning – Brief Summary I

TASCA is – Operational

- Working \approx as anticipated / calculated
- Ready for TAN / SHE experiments ✓

HTM: - High efficiency (qualitatively) ✓
- Good image size → Competitive

SIM: - Small spot in FPD/RTC ✓
- Good efficiency → Unique ✓

Gas: - He operation - routinely ✓
- H₂ operation - started → Unique ✓

FPD: - 16-strip PIPS operational ✓
- DSSD prototype tested ✓

DAQ: - SHIP-type operational ✓
- COMPACT-type operational ✓

Det: - γ -single measurements ✓

HTM: - Efficiency data need evaluation
- Efficiency not fully understood

SIM: - Quad-Focusing can be improved
- Efficiency not fully understood

Gas: - More H₂; N₂; Ne?; other; mixture

FPD:
- Larger DSSD "in preparation"

DAQ: - New electronics needed
- New electronics "in production"

Det: - High effic. α - γ -coinc.; e⁻, - TOF,
- punch-through, - Rutherford are missing

Commissioning Experiments – Brief Summary II

Data eval: - Huge amount of rough data ✓
- First, exciting prelim. results ✓

Control: - Magnet finished ✓
- Beam operational ✓
- Gas flows finished ✓
- Movement part. operational ✓
- Safety / Interlocks concept ✓

Target: - ARTESIA running ✓
- Ln, PbS, Th, U on Ti tested ✓

RTC-windows: HTM + SIM ✓
large + thin + stable ✓

HTM-RTC: - First successful tests ✓
SIM -RTC: - First successful tests ✓

Data eval:: Urgent need for manpower, concepts and supervision !

Control:
- Current reading in progress
- Vacuum/gas control needs work
- Movement soon finished
- Safety/Interlocks needs work

Target: - Safety-box under construction
- ^{244}Pu in test phase, ^{248}Cm recovery

HTM-RTC: - Efficiency can be improved
SIM -RTC: - Efficiency can be improved

→ Prepare $Z \geq 104$ chemistry experiments – form collaboration(s), write proposal(s)

TASCA – TAN / SHE Experiments

1. Scientific program / planned experiments + collaboration
2. Coordinate envisioned program w/ TASCA coordinator / GSI contact
RTC / Chem : [Christoph E. Düllmann](#)
FPD / Nucl : [Dieter Ackermann](#)
3. Proposal / beam time request → G-PAC@GSI
4. Coordinate your plans and ideas (to do what, when, ...)
w/ TASCA coordinator / GSI contact
w/ GSI's beam time coordinator

Be aware: @GSI $\Delta t(\text{proposal-experiment})$ is often ≥ 1 year