Ion trap system RETRAP

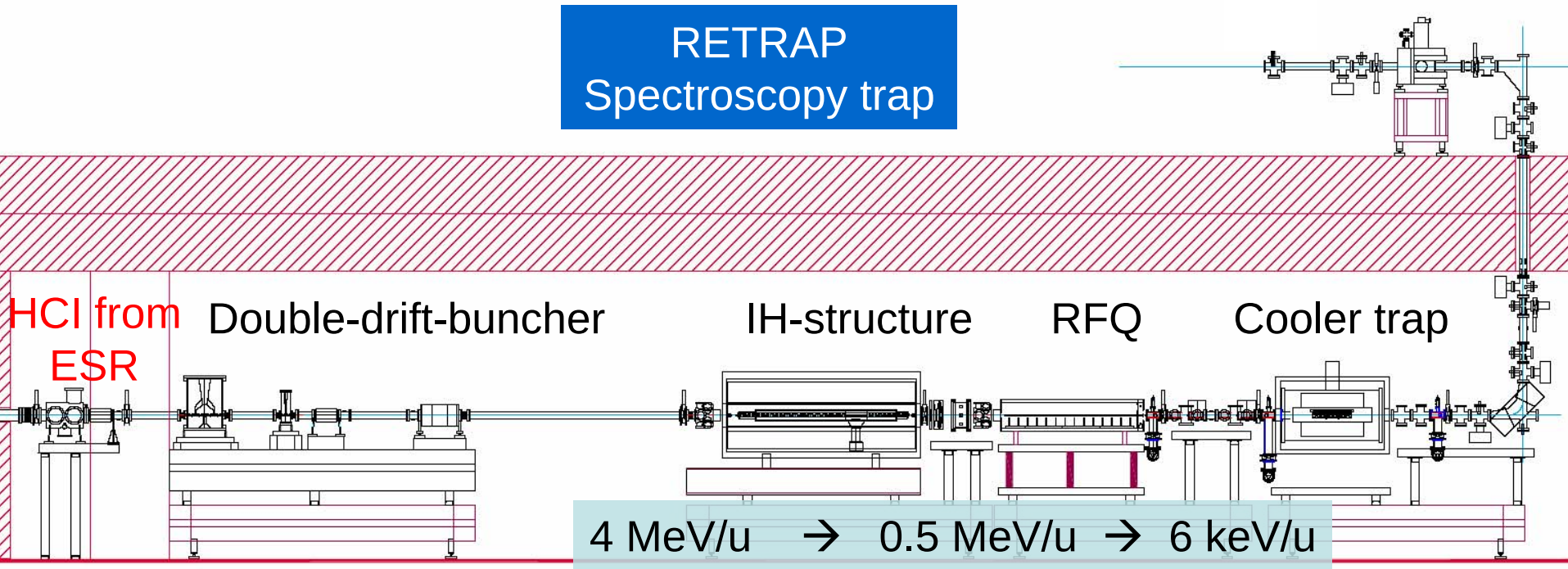
→ Richard Thompson (London)
→ Wilfried Nörtershäuser (Mainz/GSI)
→ Gerhard Birkl (Darmstadt)

MAXEBIS from the University of Frankfurt (DE)
→ Oliver Kester (GSI)
→ Holger Zimmermann (München)

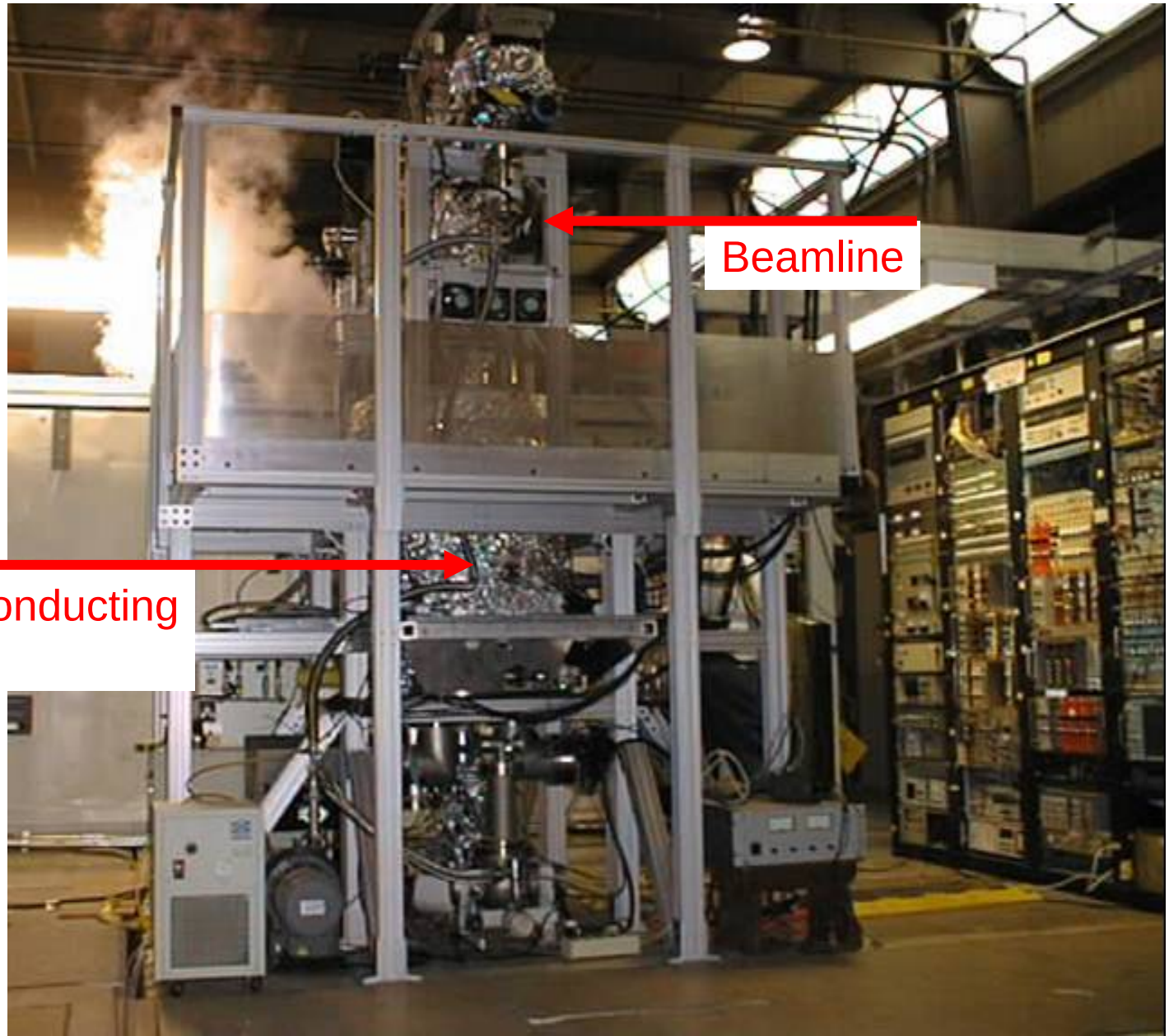
RETRAP from Lawrence Berkeley Lab (USA)
→ Dieter Schneider (Berkeley/Livermore)
→ David Church (Texas)

The HITRAP facility at GSI

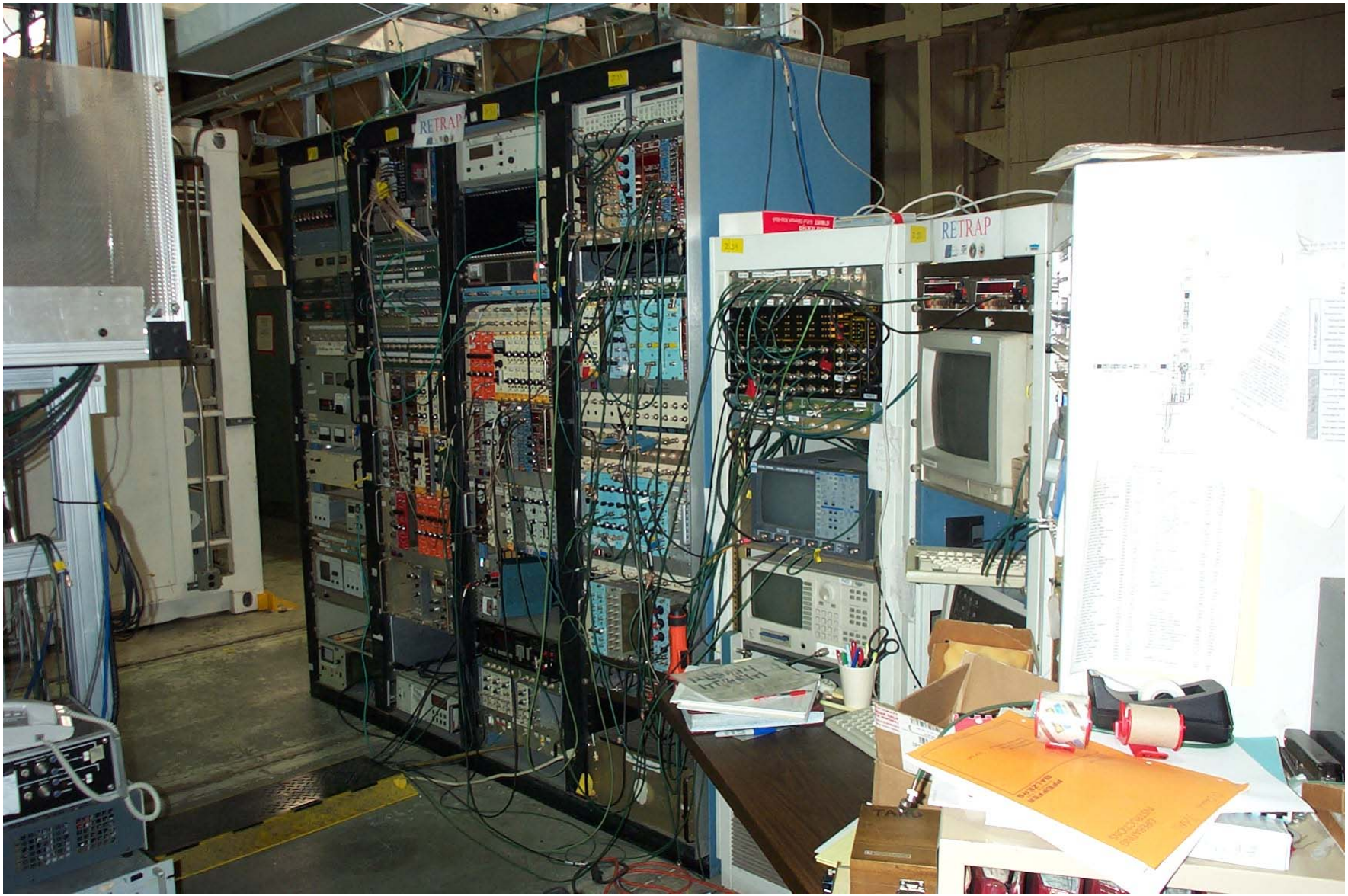
"An Ion Trap Facility for Experiments with Highly-Charged Ions"



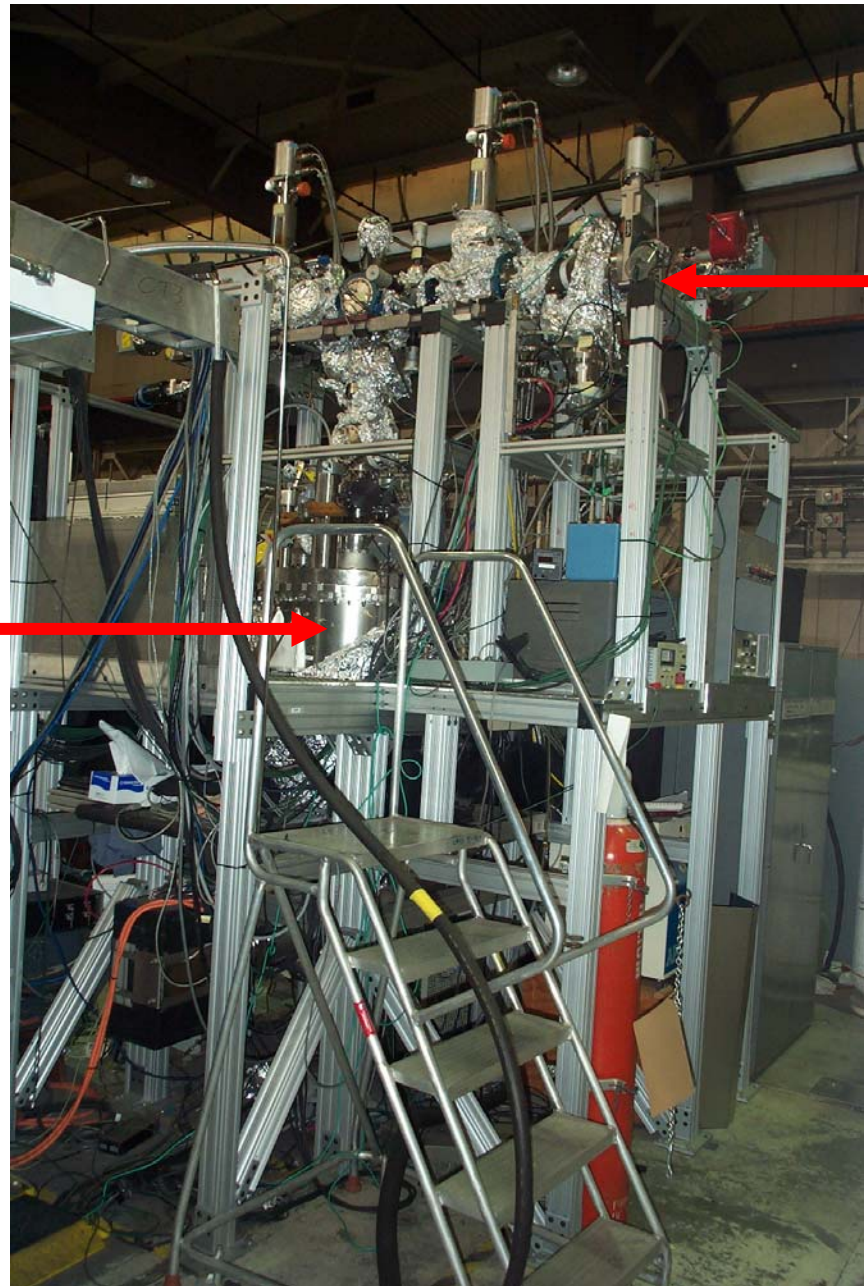
RETRAP pictures



RETRAP pictures

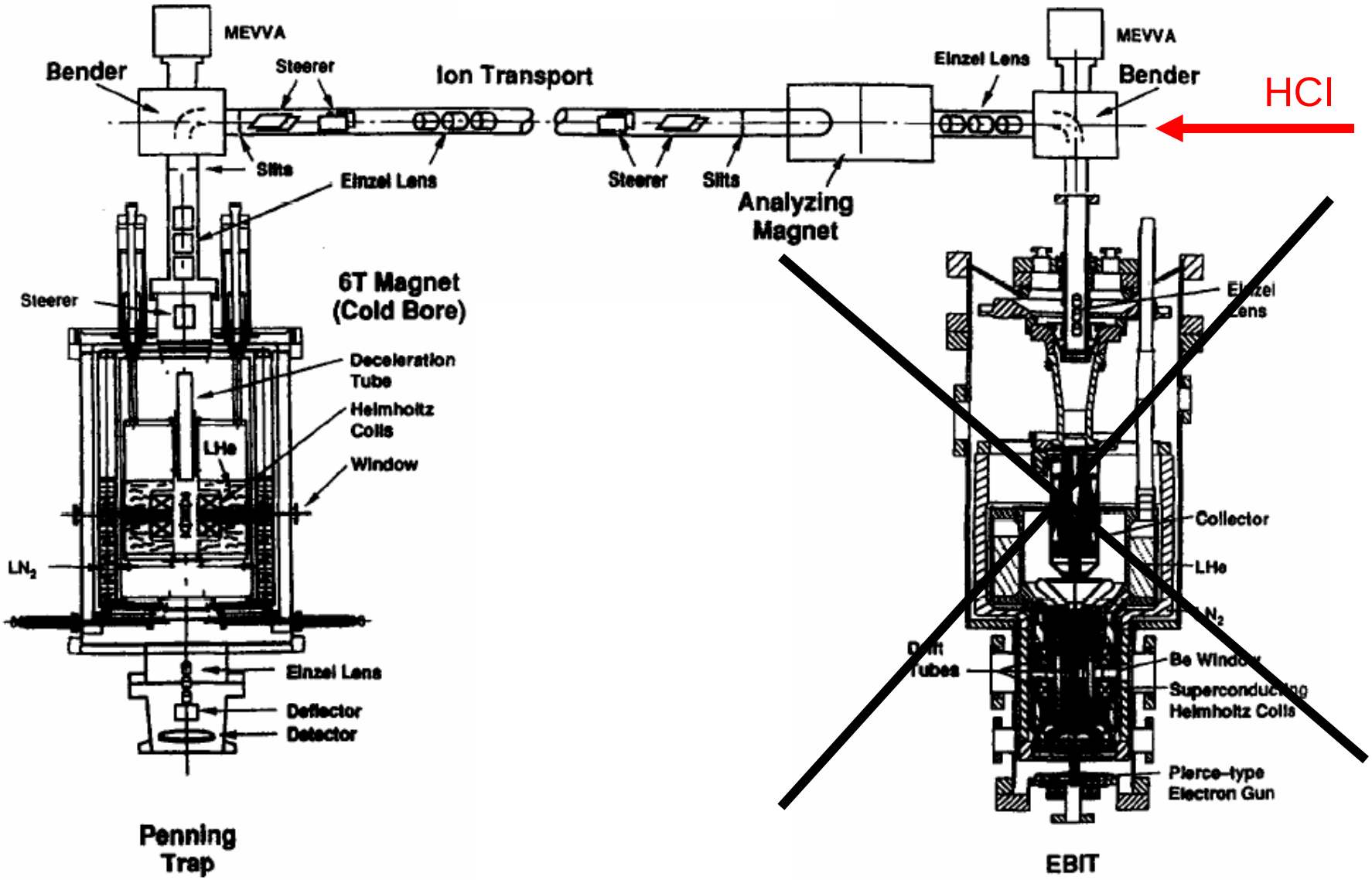


RETRAP pictures



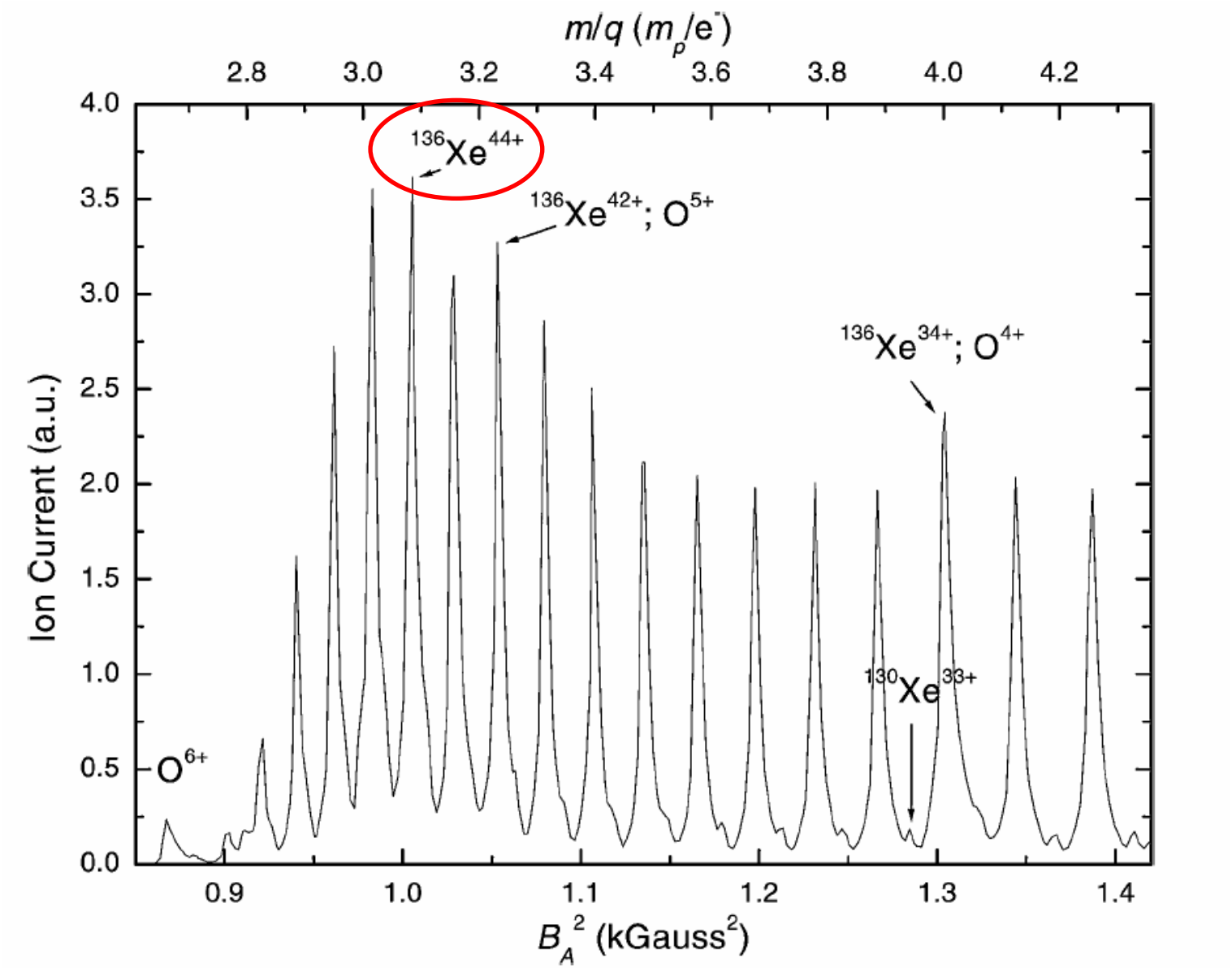
the "old" RETRAP setup

D.A. Church, Nucl. Instr. Meth. Phys. Res. B **132**, 335 (1997).



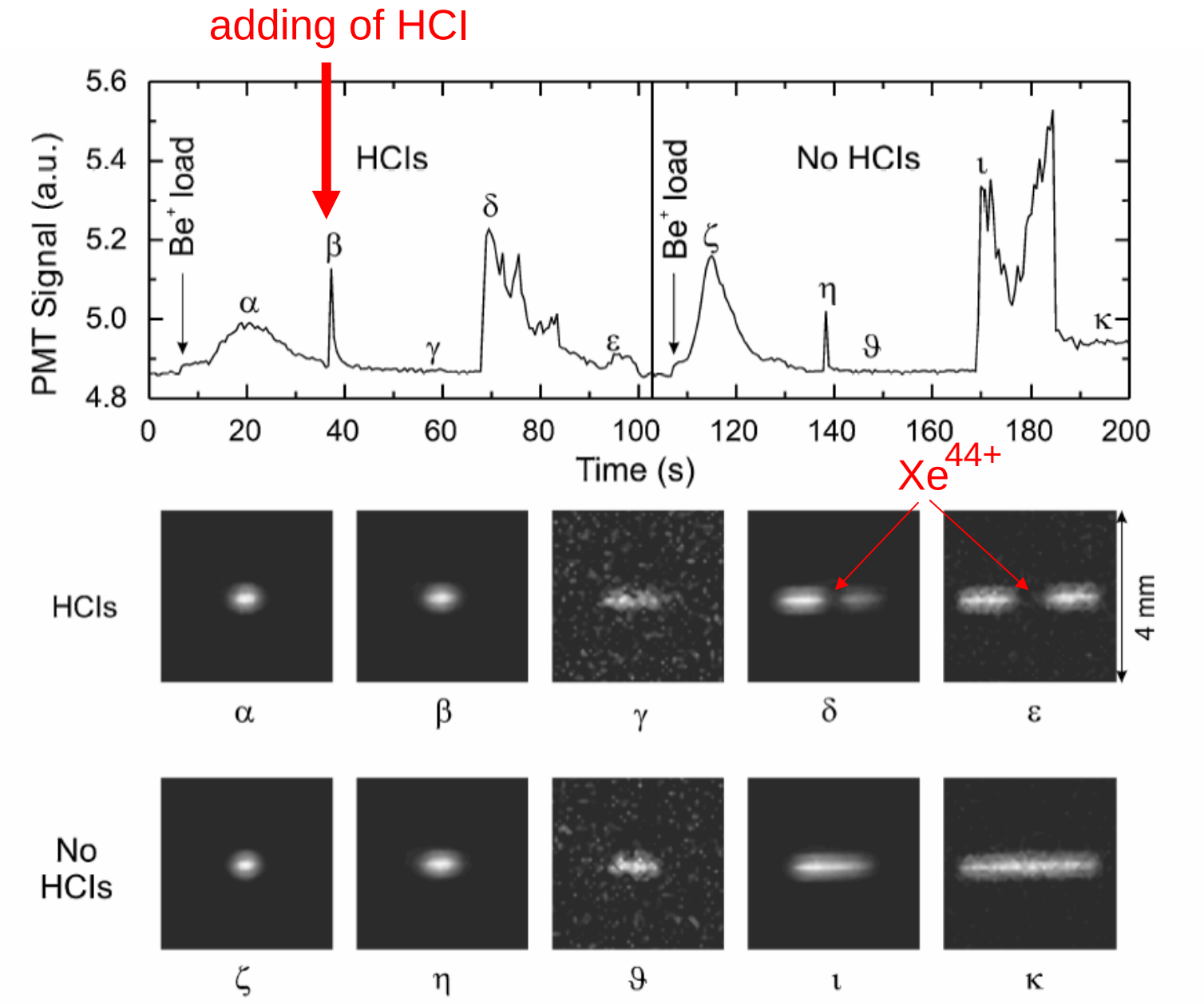
RETRAP results

L. Gruber, Phys. Scripta **71**, 60 (2005).

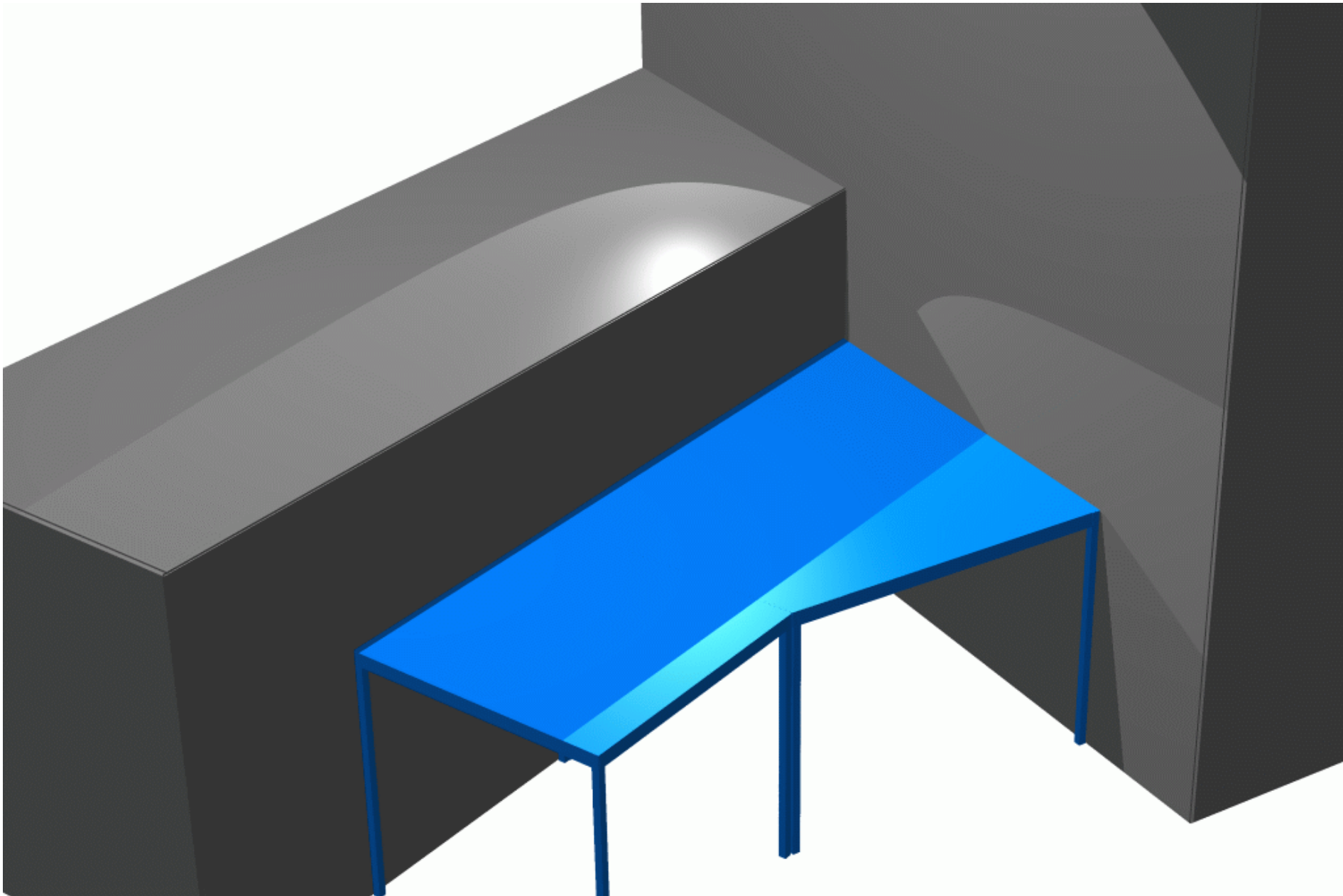


RETRAP results

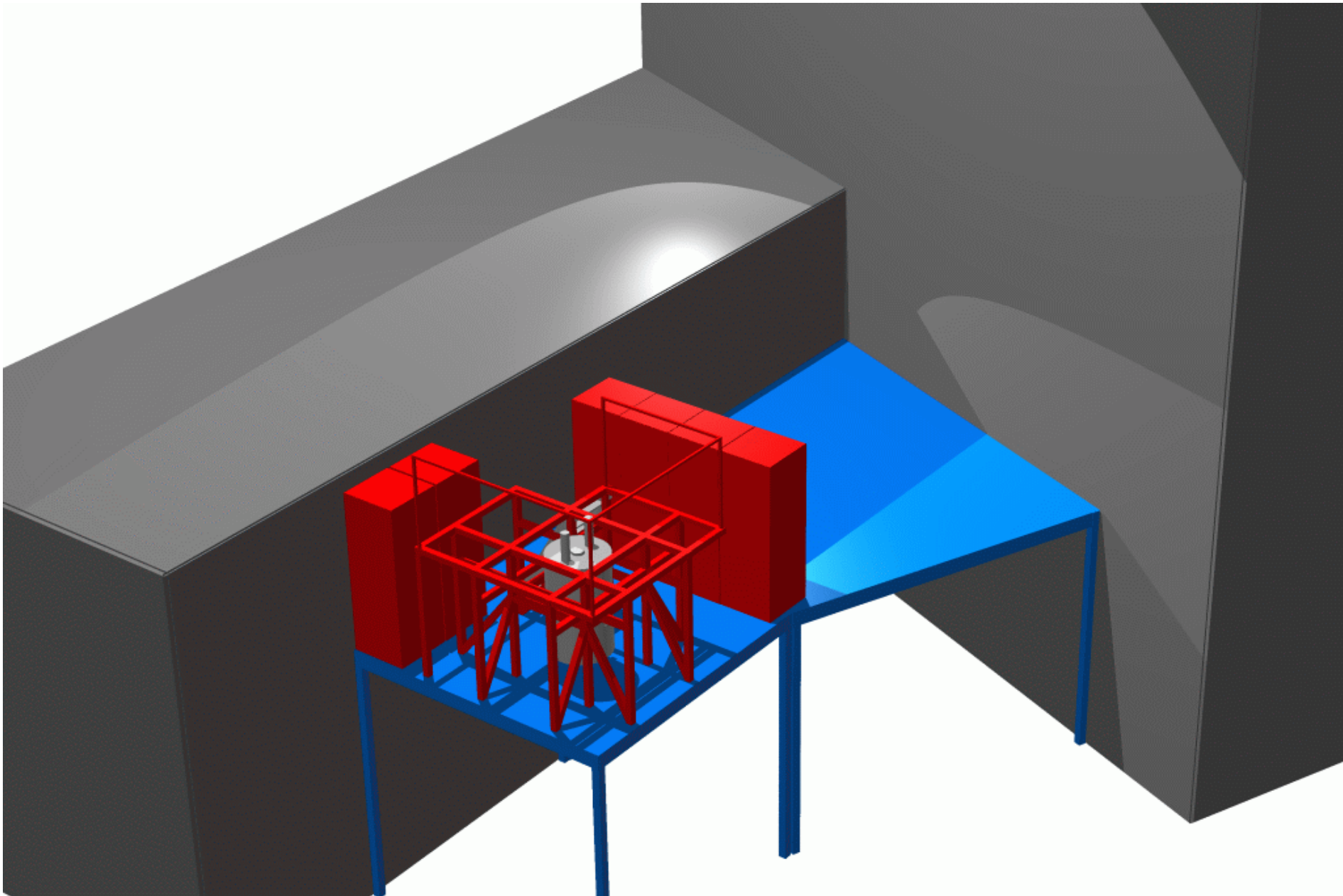
L. Gruber, Phys. Scripta **71**, 60 (2005).



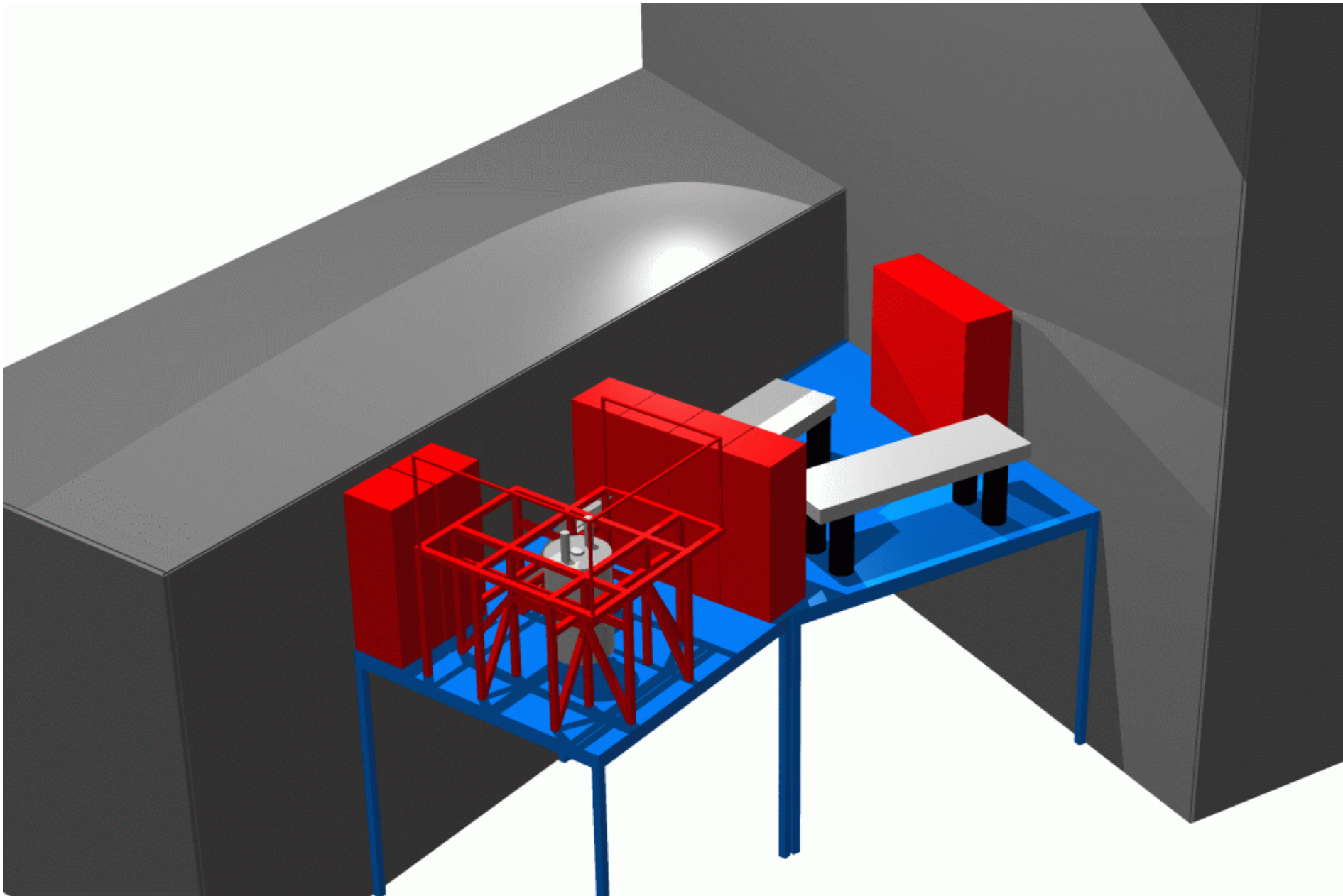
RETRAP @ HITRAP – Step 1



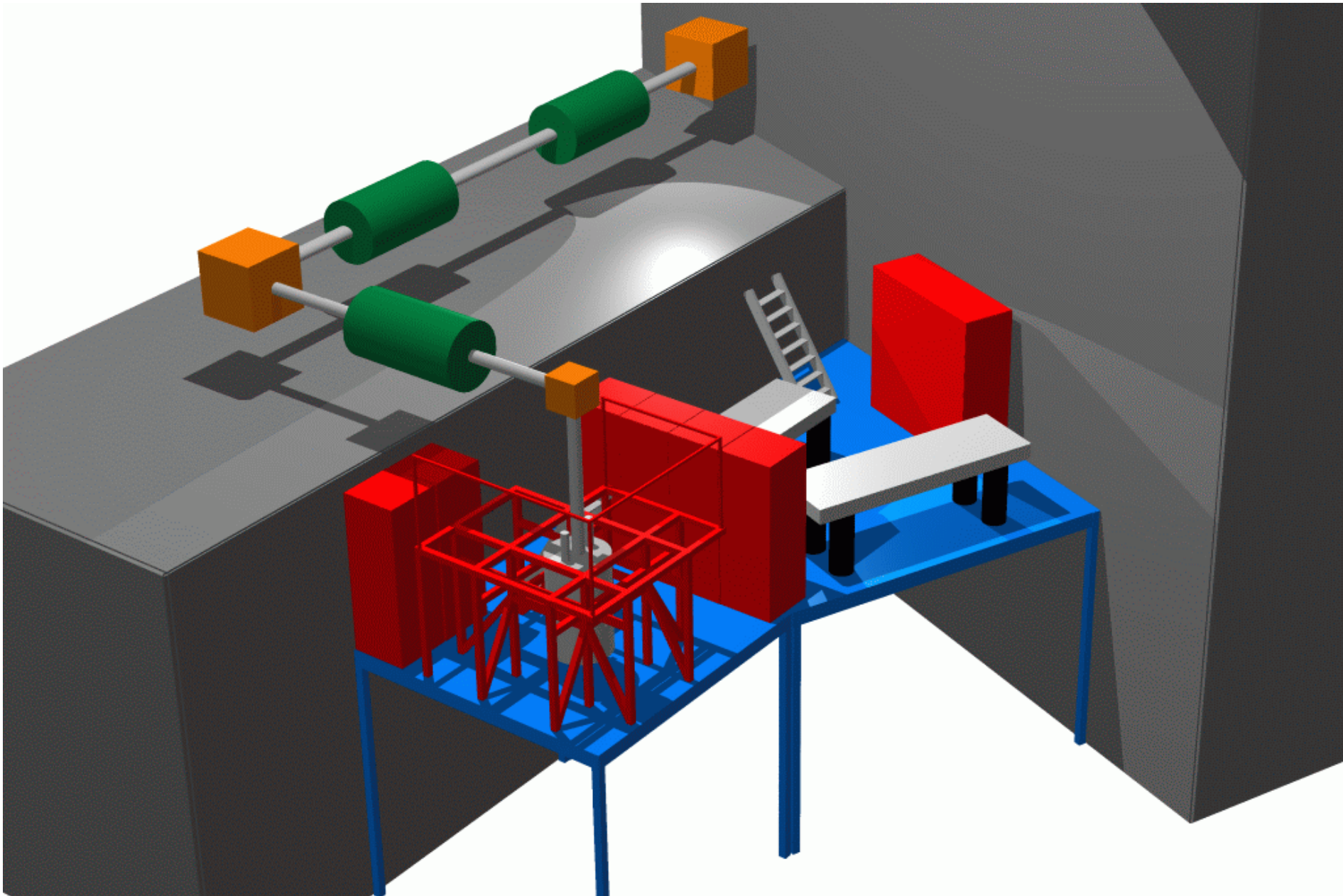
RETRAP @ HITRAP – Step 2



RETRAP @ HITRAP – Step 3



RETRAP @ HITRAP – Step 4



Timeline for RETRAP @ HITRAP

time

shipping of RETRAP from Berkeley to GSI in early 2007

installation directly at HITRAP (not in the Heck Halle)

tests with MAXEBIS & Cooler trap → RETRAP

tests at the HITRAP facility in 2007
$^{207}Pb^{+}$, $^{2}P_{1/2}$ → $^{2}P_{3/2}$ (I=1/2, λ~710 nm) → magnetic moment

measurements of ground state hyperfine splittings in 2008
$^{207}Pb^{81+}$ (~1020 nm), $^{209}Bi^{82+}$ (~244 nm) and $^{209}Bi^{80+}$ (~1555 nm)