



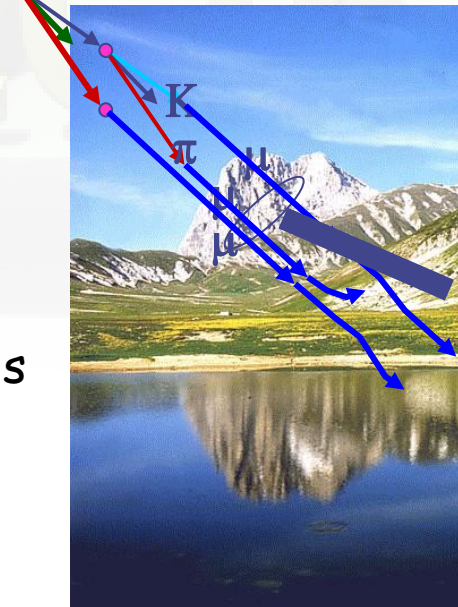
The FLUKA Code

FLUKA

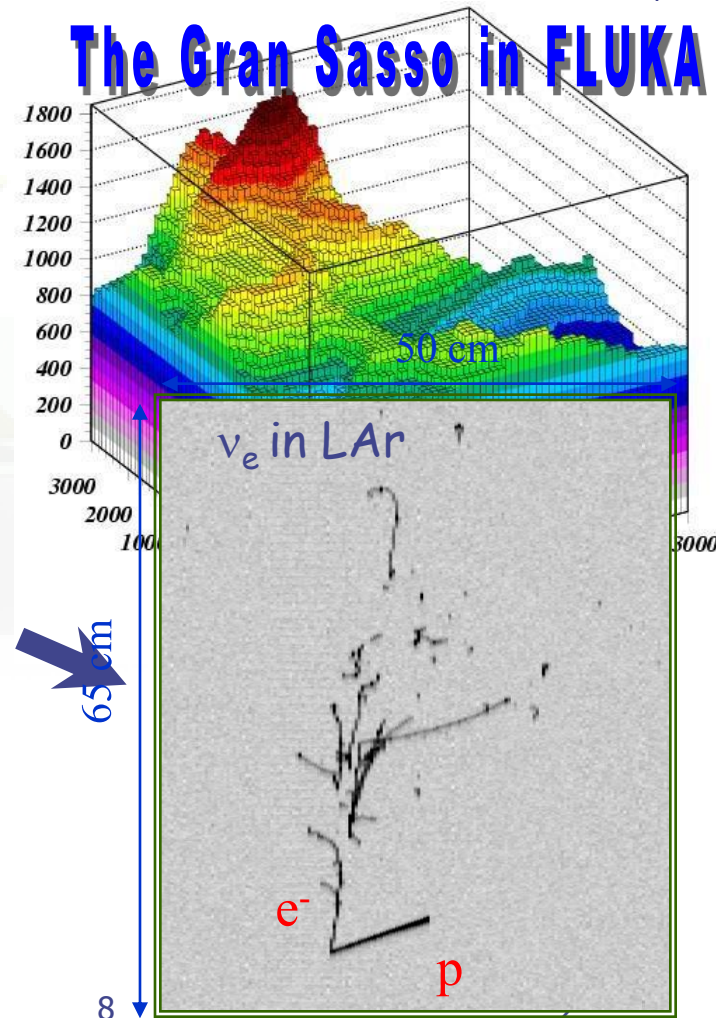
<http://www.fluka.org>

Interaction and Transport Monte Carlo code

- Hadron-nucleus interactions
- Nucleus-Nucleus interactions
- Electron-photon int. **Cosmic Rays in atmosphere**
- Muon int. (inc photonuc)
- Neutrino int.
- Particle Transport
 - multiple scattering
- Ionization
- Decay
- Low energy neutrons
- Combinatorial geo + voxels
- Magnetic field
- Analogue or biased



The Gran Sasso in FLUKA





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A A A



Last version:

FLUKA 2008.3b.1,
(last respin March 23rd
2009)
FLAIR 0.7

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News:

Courses Update (04.06.2009)

The 9th FLUKA Course
will be held in Mumbai
at the Bhabha Atomic
Research Centre
(India).

Registration is
completed!

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For more info see for [about](#) page and [manuals](#).

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The FLUKA international Collaboration

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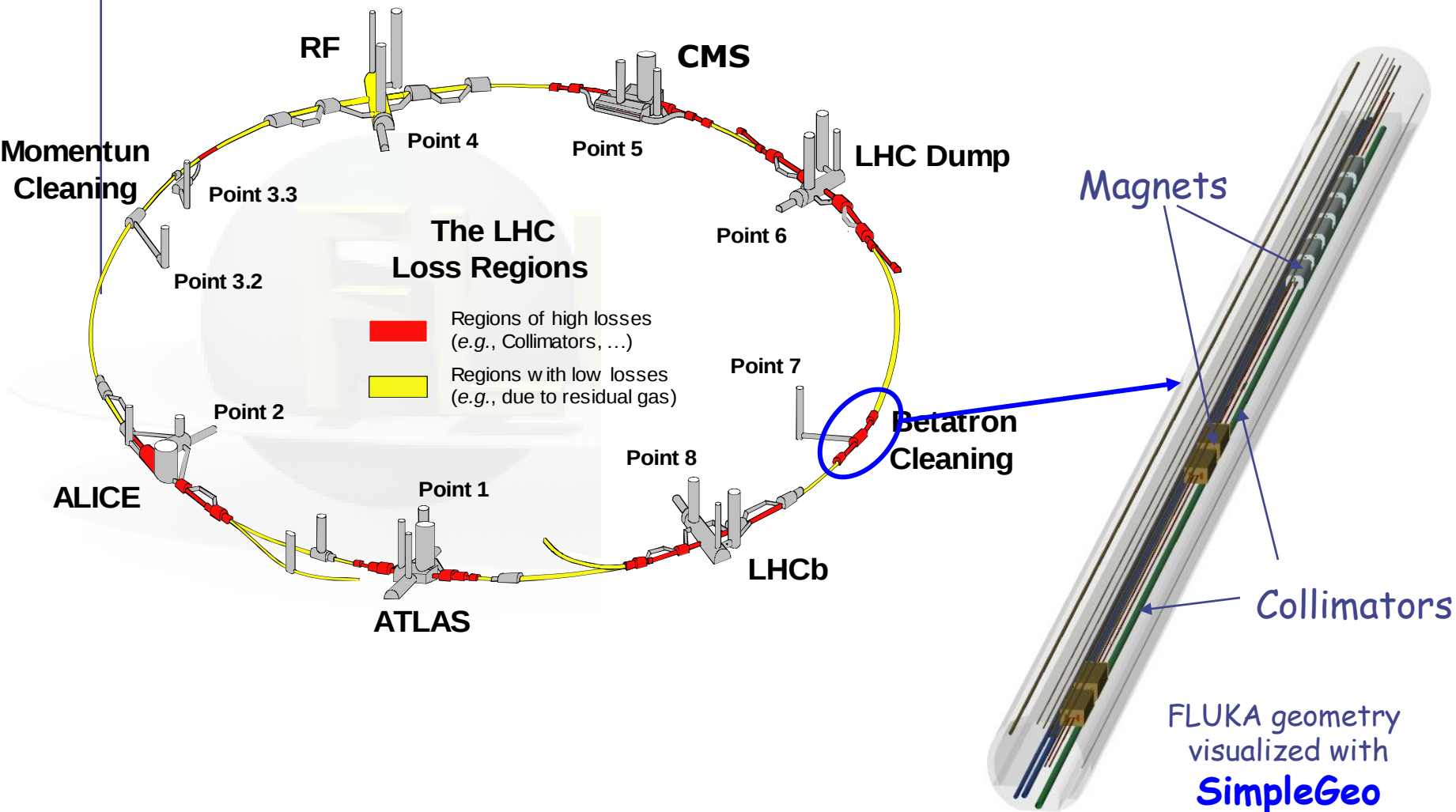
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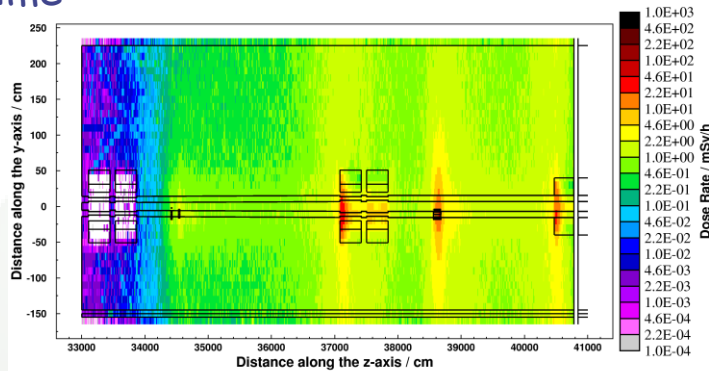
Applications – *LHC collimation region*



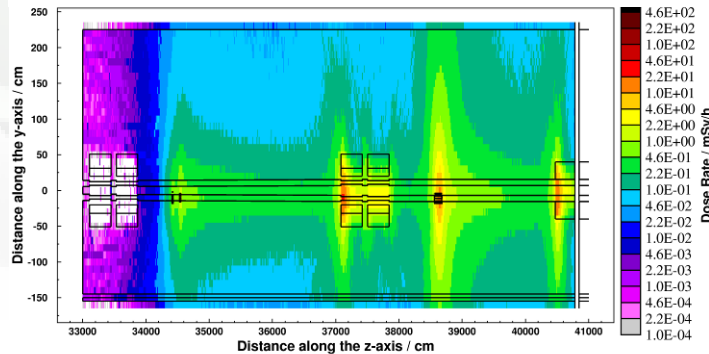
Applications – *LHC collimation region*

Cooling time

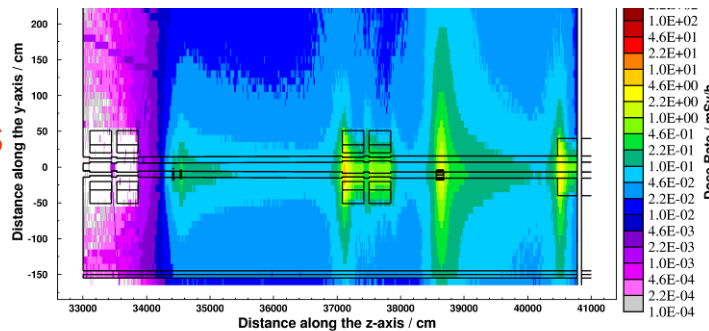
8 hours



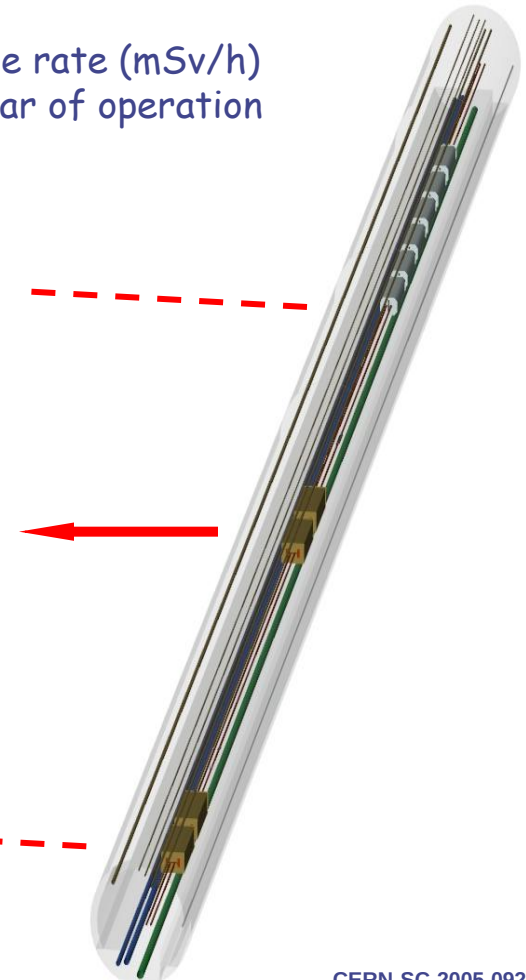
1 week



4 months



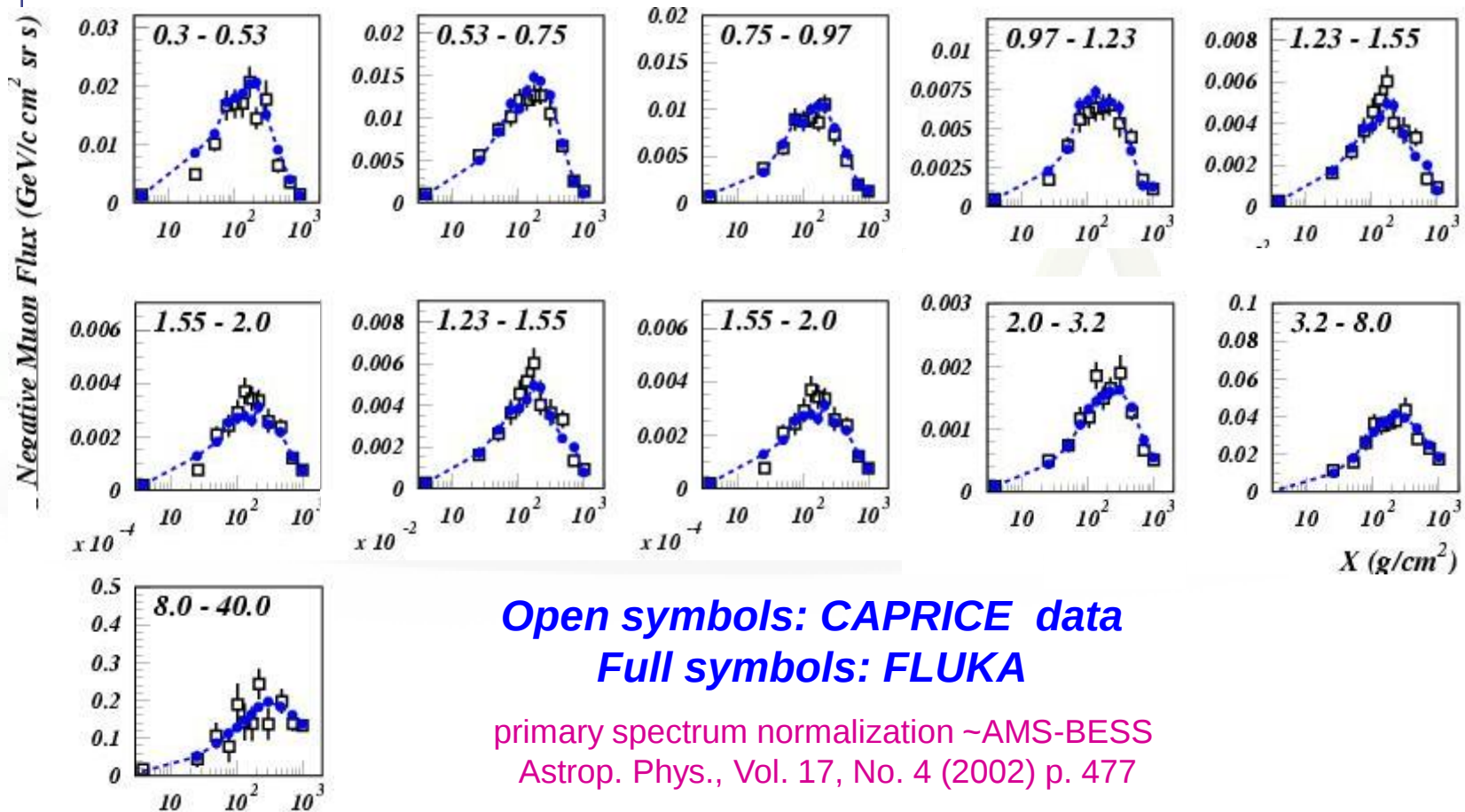
Residual dose rate (mSv/h)
after one year of operation



CERN-SC-2005-092-RP-TN
**REMANENT DOSE RATE MAPS
OF THE LHC BETATRON CLEANING INSERTION (IR7)**

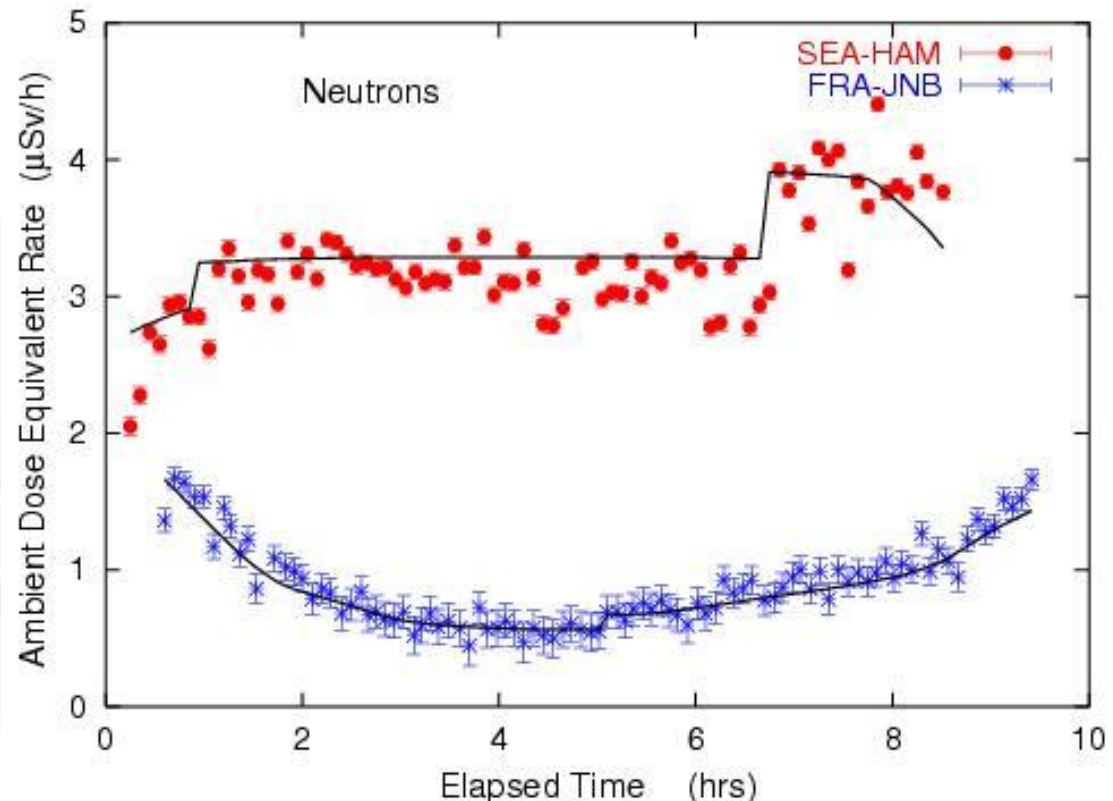
M. Brugger, D. Forkel-Wirth, S. Roesler

Negative muons at floating altitudes: CAPRICE94



Dosimetry Applications

Roesler et al.,
Rad. Prot. Dosim.
98, 367 (2002)

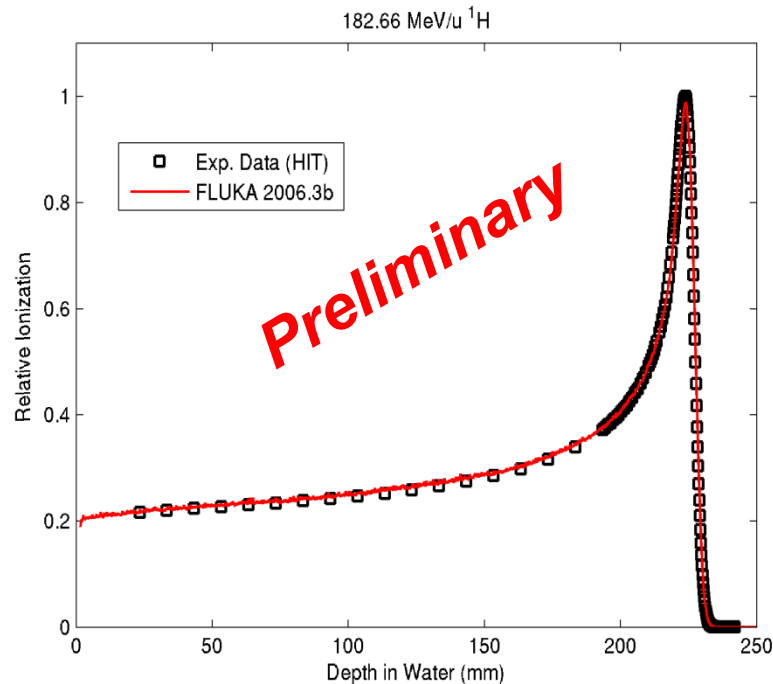


Ambient dose equivalent from neutrons at solar maximum on commercial flights from Seattle to Hamburg and from Frankfurt to Johannesburg.

Solid lines: FLUKA simulation

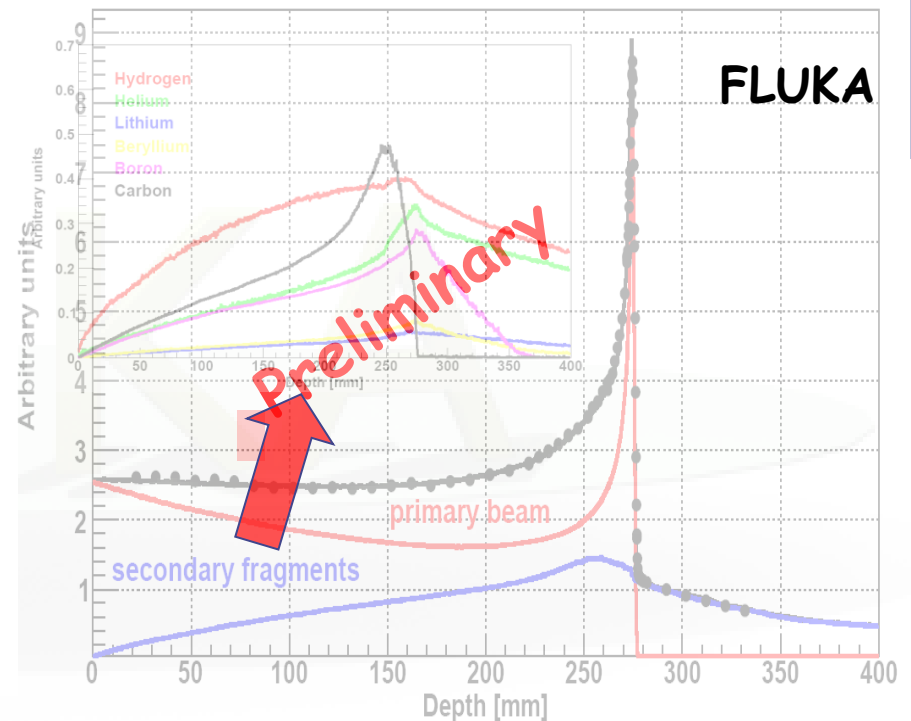
Experimental validation against measured Bragg curve in Proton and Carbon ion therapy

Protons (183 MeV/u) in Water



*Exp. Data (points) taken at HIT:
D. Schardt, P. Steidl, K. Parodi,
S. Bruns et al.
Simulation: K. Parodi*

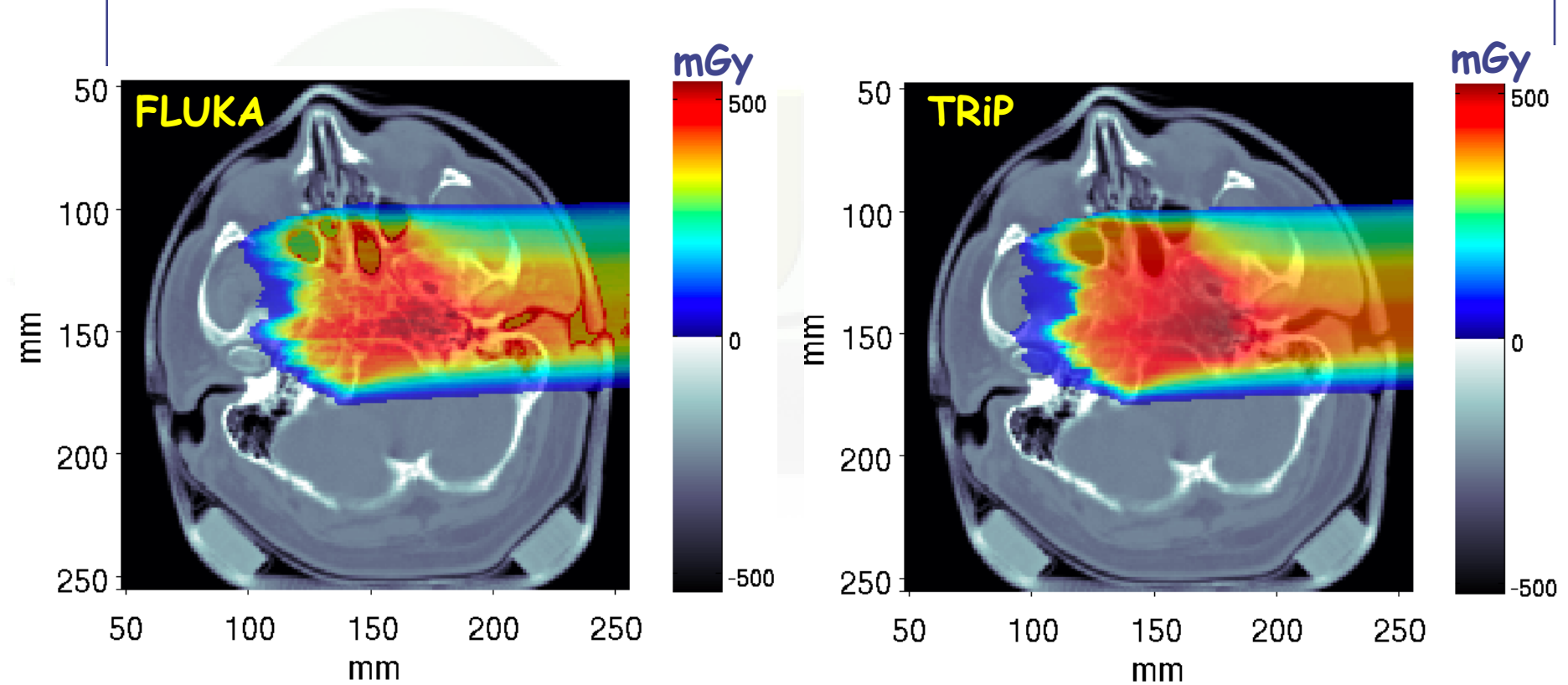
^{12}C ions (400 MeV/u) in Water



*Exp. Data (points) from Haettner et
al, Rad. Prot. Dos. 2006
Simulation: A. Mairani, PhD Thesis,
Pavia, 2007*

Validation of TPS in the patient CT system

Clivus Chordoma Patient – Absorbed Dose



A. Mairani et al to be published



end



The word "FELUKA" is rendered in a 3D, light yellow, blocky font. It is positioned behind the word "end" and sits on a light green, oval-shaped platform. A large, semi-transparent sphere is visible behind the letters "FEL". The entire scene is set against a light blue background.