HINDAS

High- and Intermediate-energy Nuclear Data for Accelerator-driven System

1999-2003

Experimental work at 20 - 200 MeV

- **Light charged-particle production induced by neutrons and protons.**
- **Neutron production induced by neutrons and protons.**
- **Residual nuclide production induced by neutrons and protons, and production of long-lived radionuclides.**

Experimental work above 200 MeV

- **Light charged-particle production.**
- **Neutron production induced by protons in thin and thick targets.**
- **Residual nuclide production in inverse kinematics.**

Theory and evaluation

- **Nuclear data libraries and related theory.**
- **High-energy models and codes.**

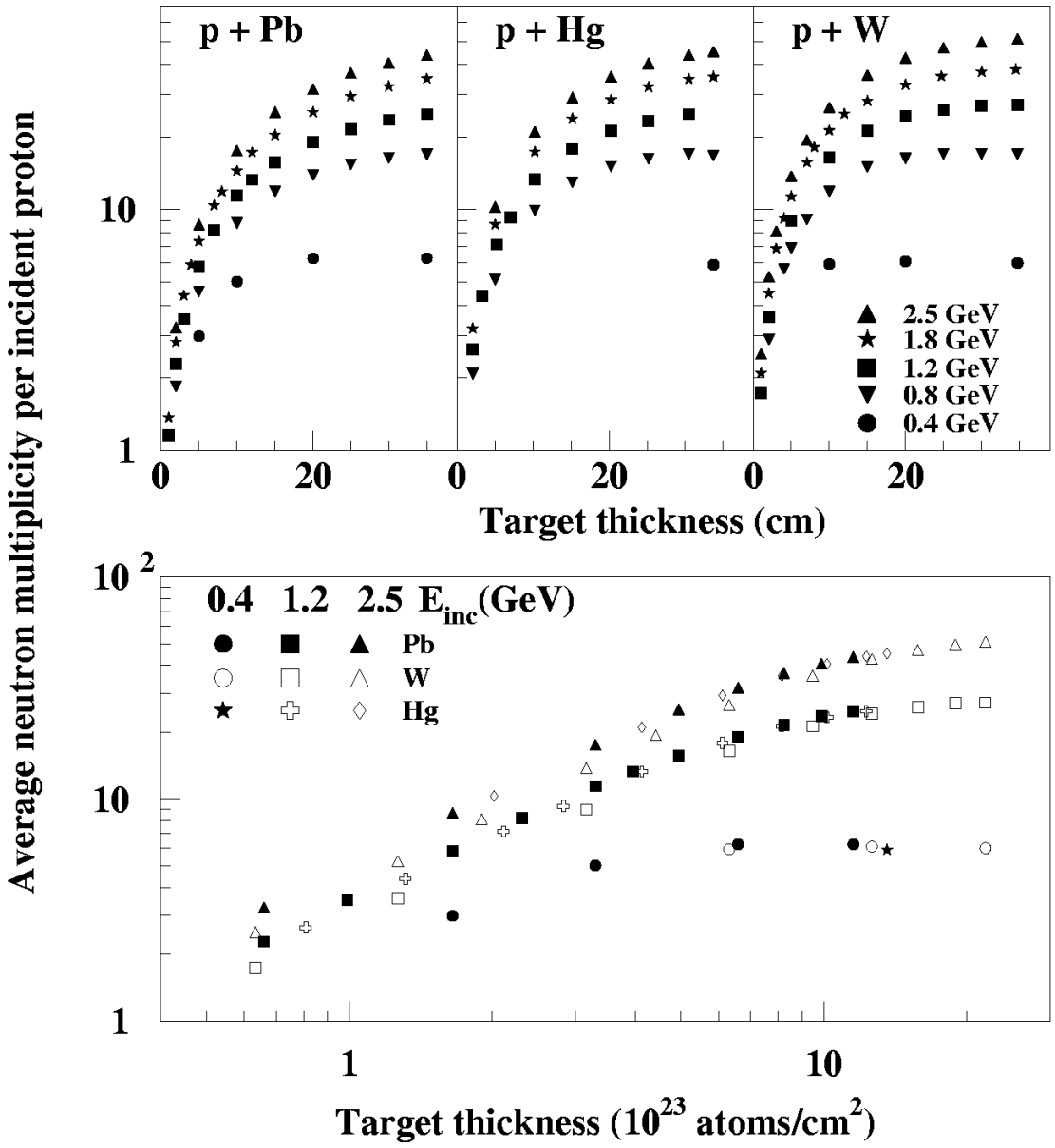
Network on nuclear data for ADS (HINDAS)

UCL Louvain-la-Neuve, Belgium
Subatech Nantes, France
LPC Caen, France
RuG Groningen, Netherlands
UU Upsala, Sweden
ZSR Hannover, Germany
PTB Braunschweig, Germany
IPP Zürich, Switzerland
PSI Zürich, Switzerland
FZJ Jülich, Germany
CEA Saclay, France
CEA Bruyères-le-Châtel, France
GSI Darmstadt, Germany
Universidad Santiago de Compostela, Spain
Ulg Liège, Belgium
NRG Petten, Netherlands

Experimental collaborations are even broader, e.g. experiments on residue production at GSI:

GSI Darmstadt, Germany
Universidad Santiago de Compostela, Spain
IPN Orsay, France
CEA Saclay, France
CEN Bordeaux-Gradignan, France

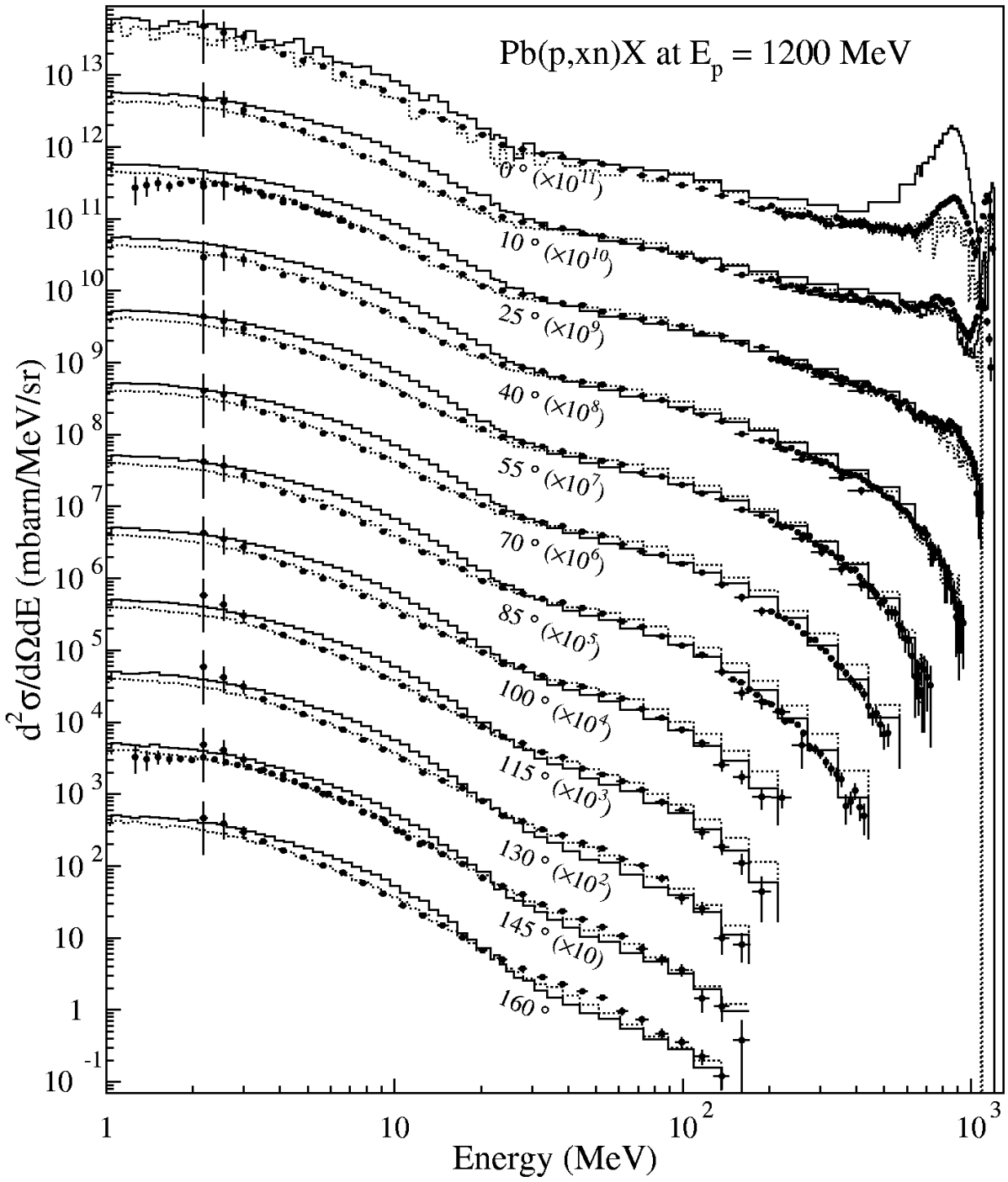
Neutron multiplicities



Average neutron multiplicity per incident neutron.

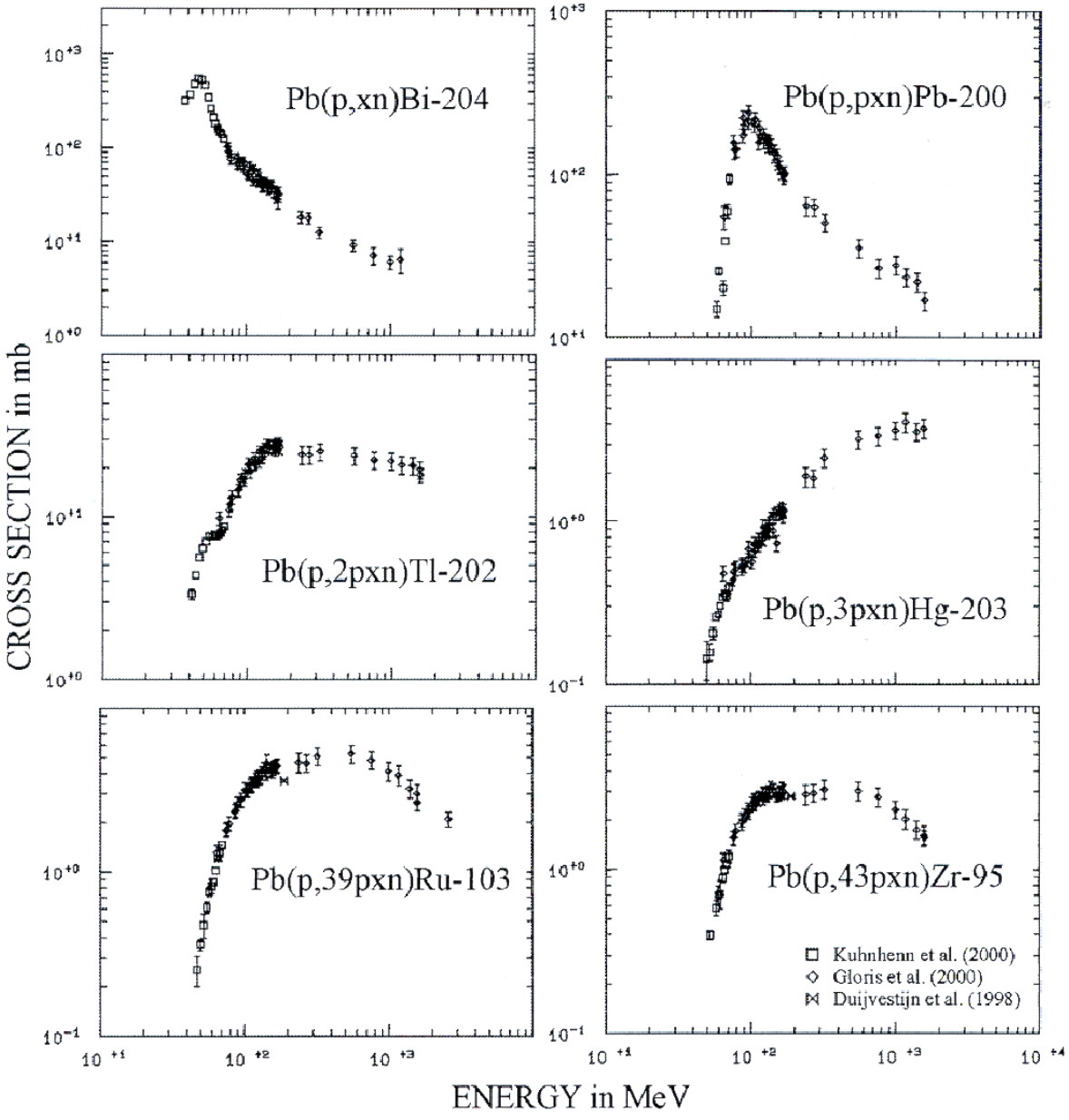
A. Letourneau et al., Nucl. Instr. and Methods B 170 (2000) 299

Proton-induced neutron cross sections



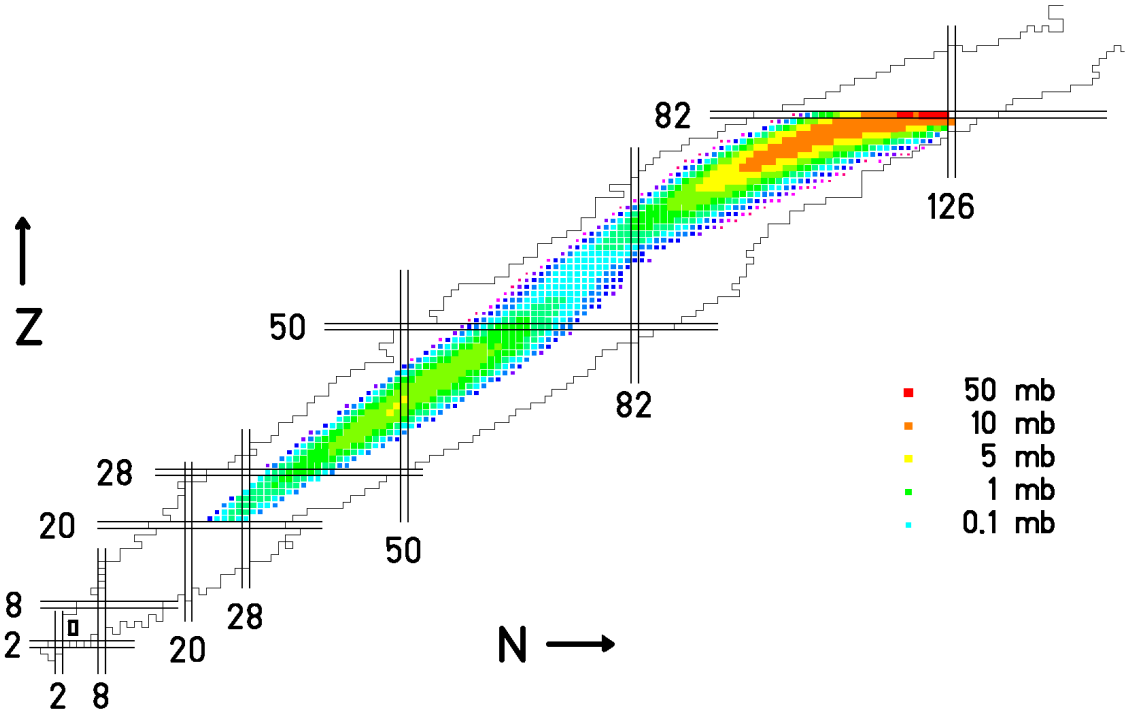
Neutron production double-differential cross sections. Data points with Bertini INC (histograms) and Cugnon INC (dotted lines). From X. Ledoux et al., Phys. Lett. 82 (1999) 4412

Residual-nuclide production with spectroscopic methods



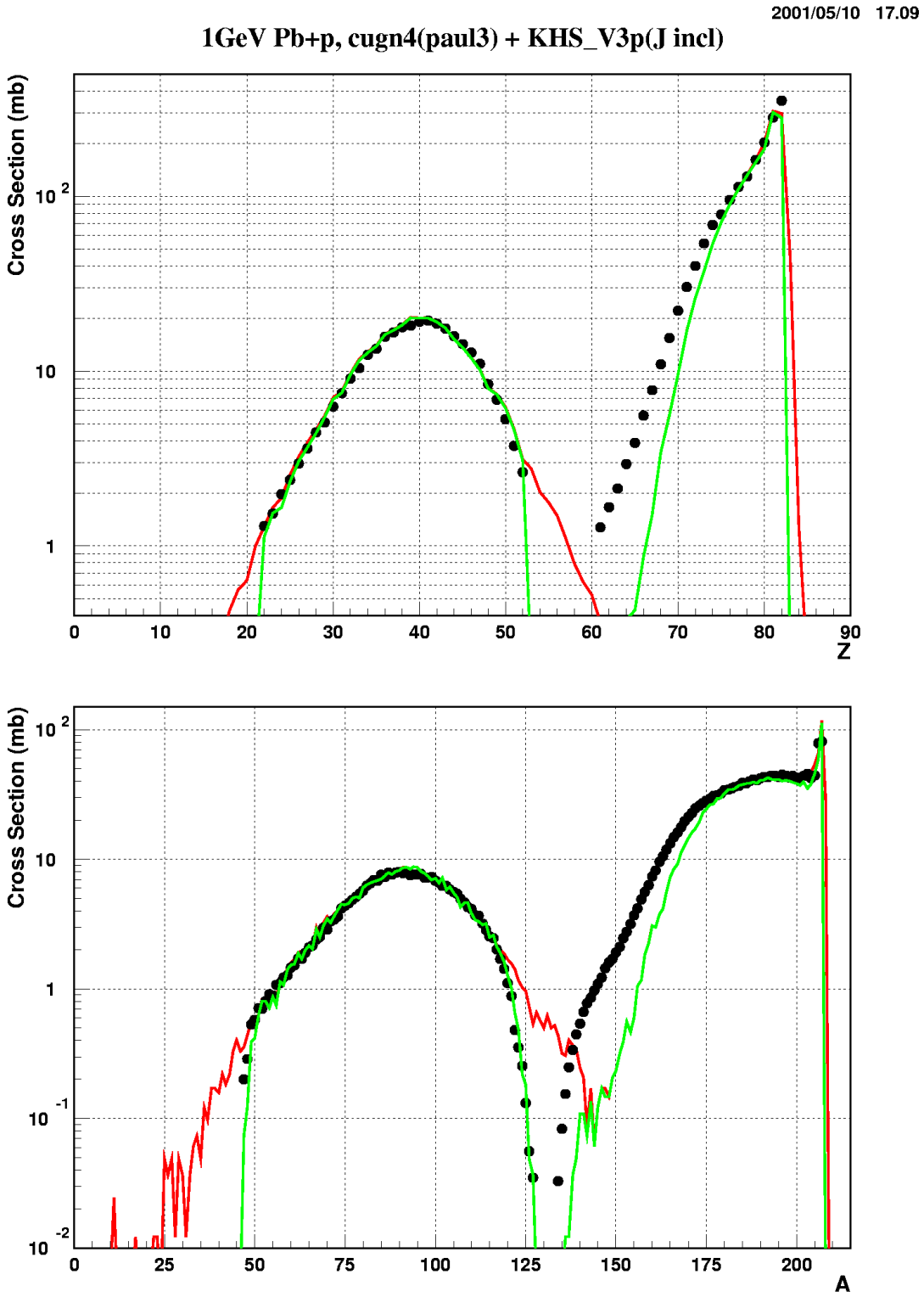
Excitation functions for some selected isotopes produced in the interaction of protons with lead.
M. Gloris et al., Nucl. Instr. And Methods B (2000) in print

Residue cross sections ^{208}Pb + ^{1}H (1 A GeV)



Cross sections of heavy residues measured in inverse kinematics.
T. Enqvist et al., Nucl. Phys. A 686 (2001) 481

Model calculations



Data points (T. Enqvist et al.) in comparison with calculations of total production (red line) and that of measured nuclides only (green line).