

Introduction to the “Cavities and vessels” session (by L. Mosca)

9h 10’ Presentation of the Laboratoire Souterrain de Modane (15’+ 5’)

G. Gerbier (Saclay)

9h 30’ Large excavations in the USA (25’+ 5’)

L. Petersen (Minneapolis) talk presented by Chang Kee Jung (Stony Brook)

10h 00’ Study on the Excavation of the Hyper-KAMIOKANDE Cavern (35’+ 5’)

T. Nakagawa (Tokyo)

10h 40’ ----- Coffee break (20’) -----

11h 00’ Large excavations in Europe (25’+ 5’)

M. Lévy (Paris)

11h 30’ Engineering of large and deep rock caverns for physics research (25’+ 5’)

P. Duffaut (Paris)

12h 00’ Concluding Remarks of the Conference (20’+ 5’)

K. Nakamura (KEK)

Candidate sites for future projects of Very Large (“Megaton scale”) Laboratories

Japan :

YperKamioka site

North America :

Cascades-Icicle Creek, WA (USA)

Henderson Mine, Empire, CO (USA)

Homestake Mine, Lead, SD (USA)

Kimballton Mine, Giles Co., VA (USA)

San Jacinto, CA (USA)

Soudan Mine, Soudan, MN (USA)

SNOLAB, Sudbury, ONT (Canada)

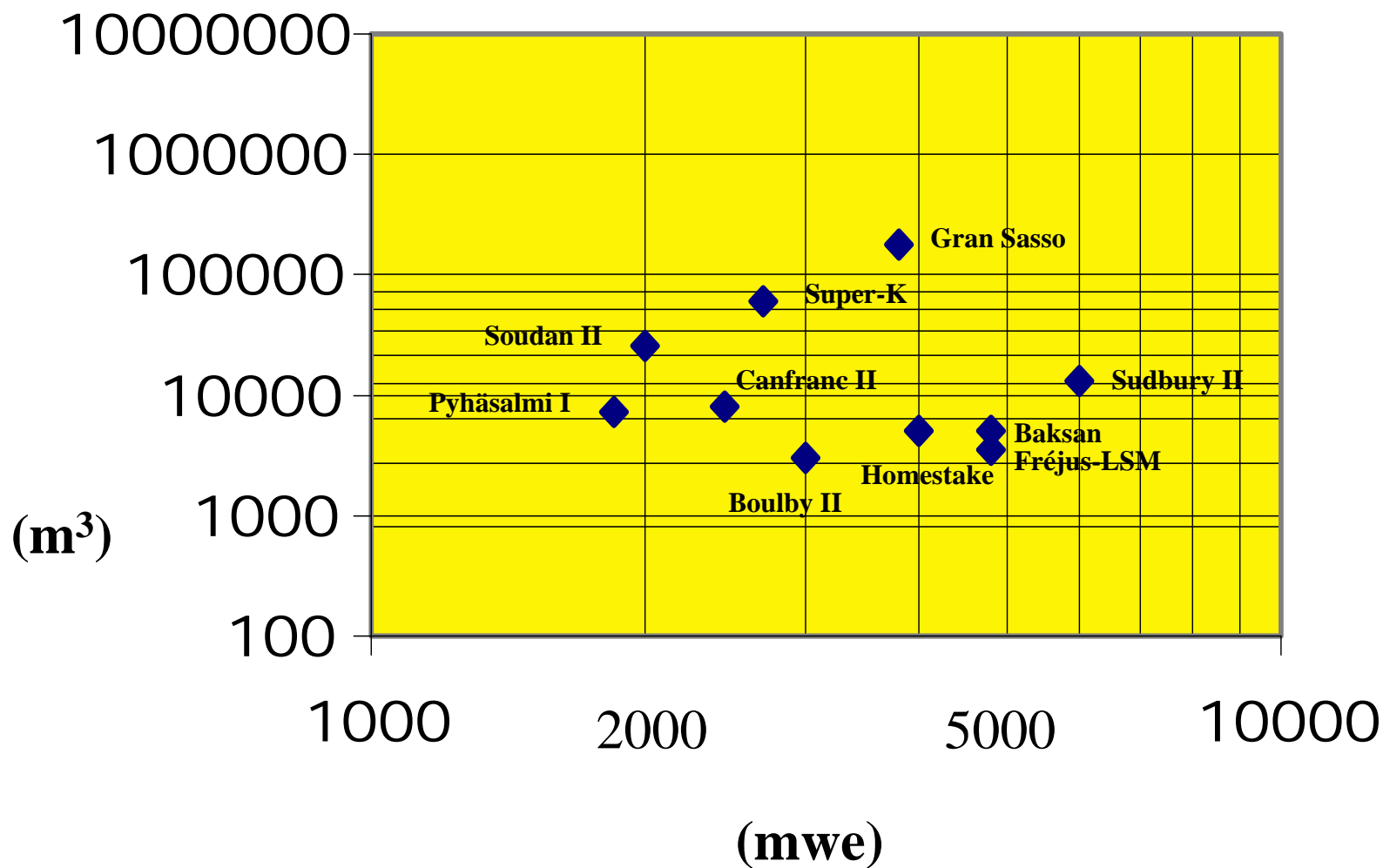
WIPP, Carlsbad, NM (USA)

Europe :

Fréjus tunnel (France/Italy)

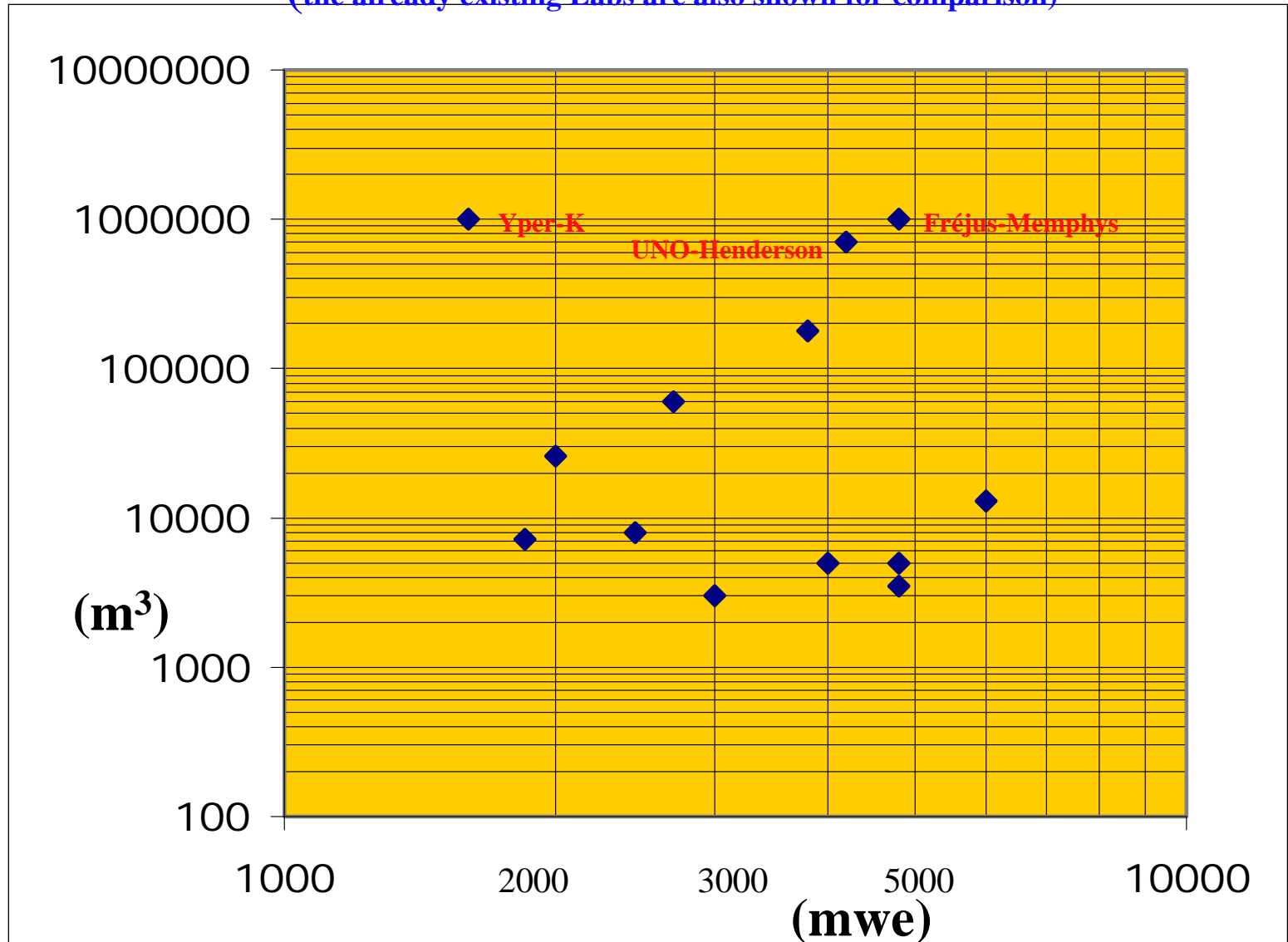
Poland site

Volume (m³) vs Depth (mwe) for already existing laboratories



Volume (m³) vs Depth (mwe) for 3 projects of future Labs

(the already existing Labs are also shown for comparison)





JHF ν long-baseline neutrino-oscillation experiment at J-PARC

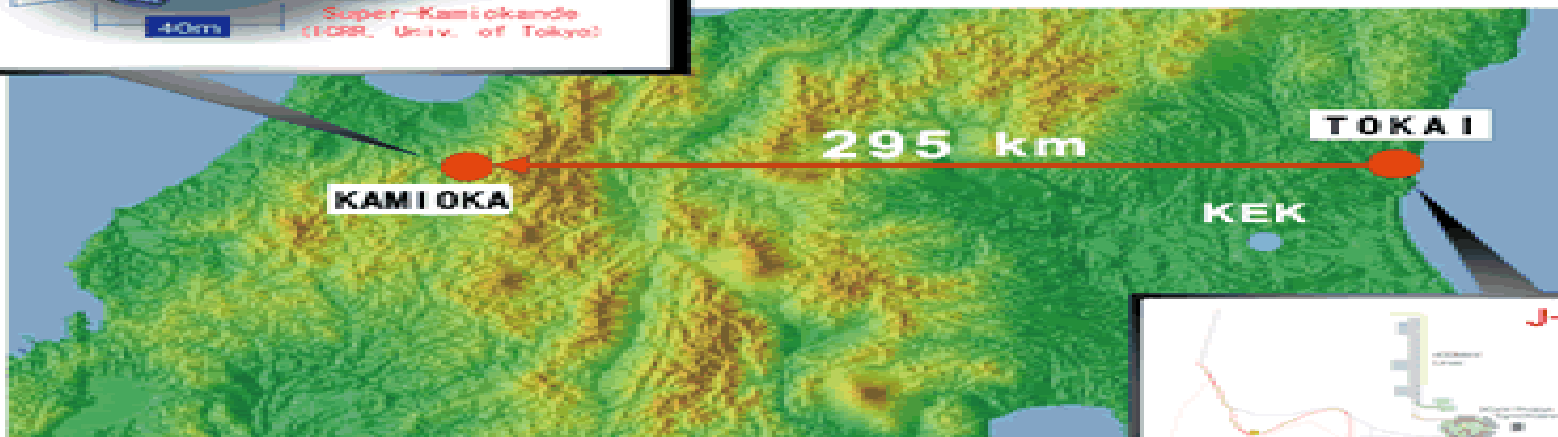
and HyperKamiokande

NEXT GENERATION LONG-BASELINE NEUTRINO OSCILLATION EXPERIMENT

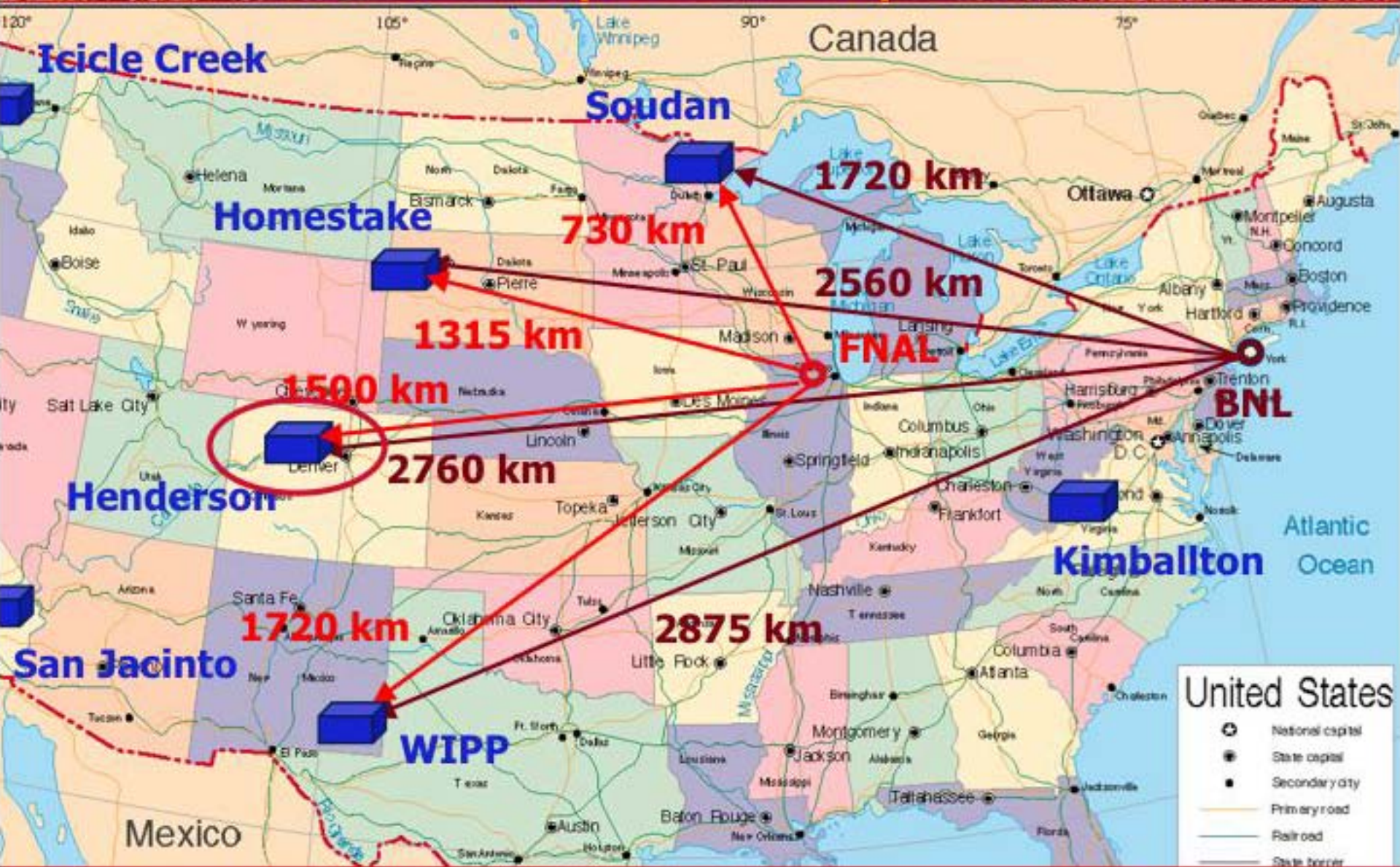
The JHF ν experiment is a second generation long-baseline neutrino-oscillation experiment to study the nature of neutrinos. Artificial neutrinos are generated in the JHF 50 GeV high-intensity proton accelerator in JAERI (Tokai, Ibaraki) and shoot toward the 50k ton water Cherenkov detector, Super-Kamiokande, which is located about 1000m underground in Kamiokama mine (Gifu) and is 295km away from Tokai.



Super-Kamiokande (ICRR, Univ. of Tokyo)



DUSEL Candidate Sites and Potential Superbeam Experiments



The CERN-Fréjus MEMPHYS Project



So, the **challenge** is now :

to find out the best site(s) with :

- relatively large **depth**
- very large **volume** (megaton scale)
-
- convenient **position** (long baseline) with respect to accelerator(s)

and

to be able to **excavate** and **stabilize** the cavities

→ let us see with the talks of this session