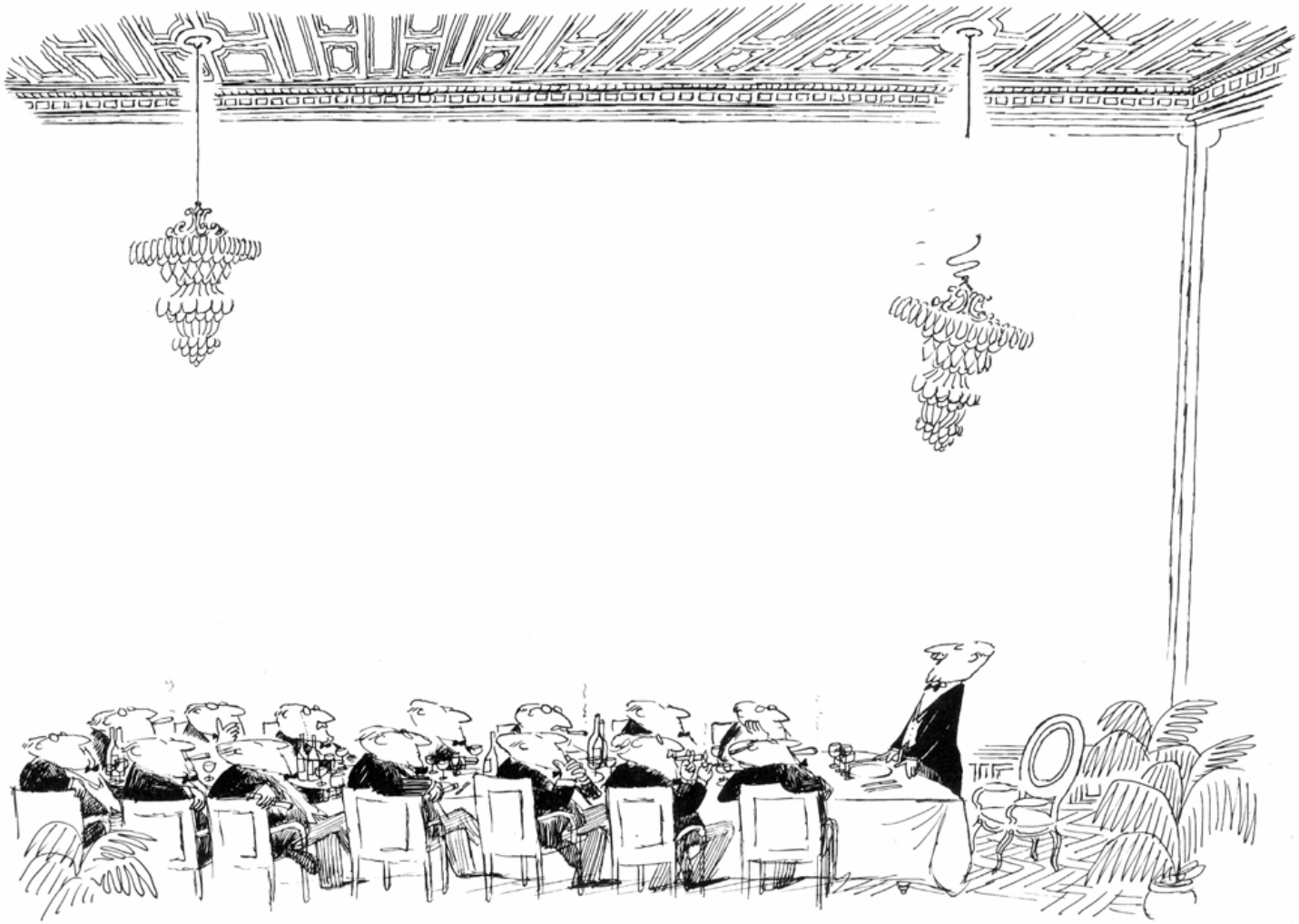
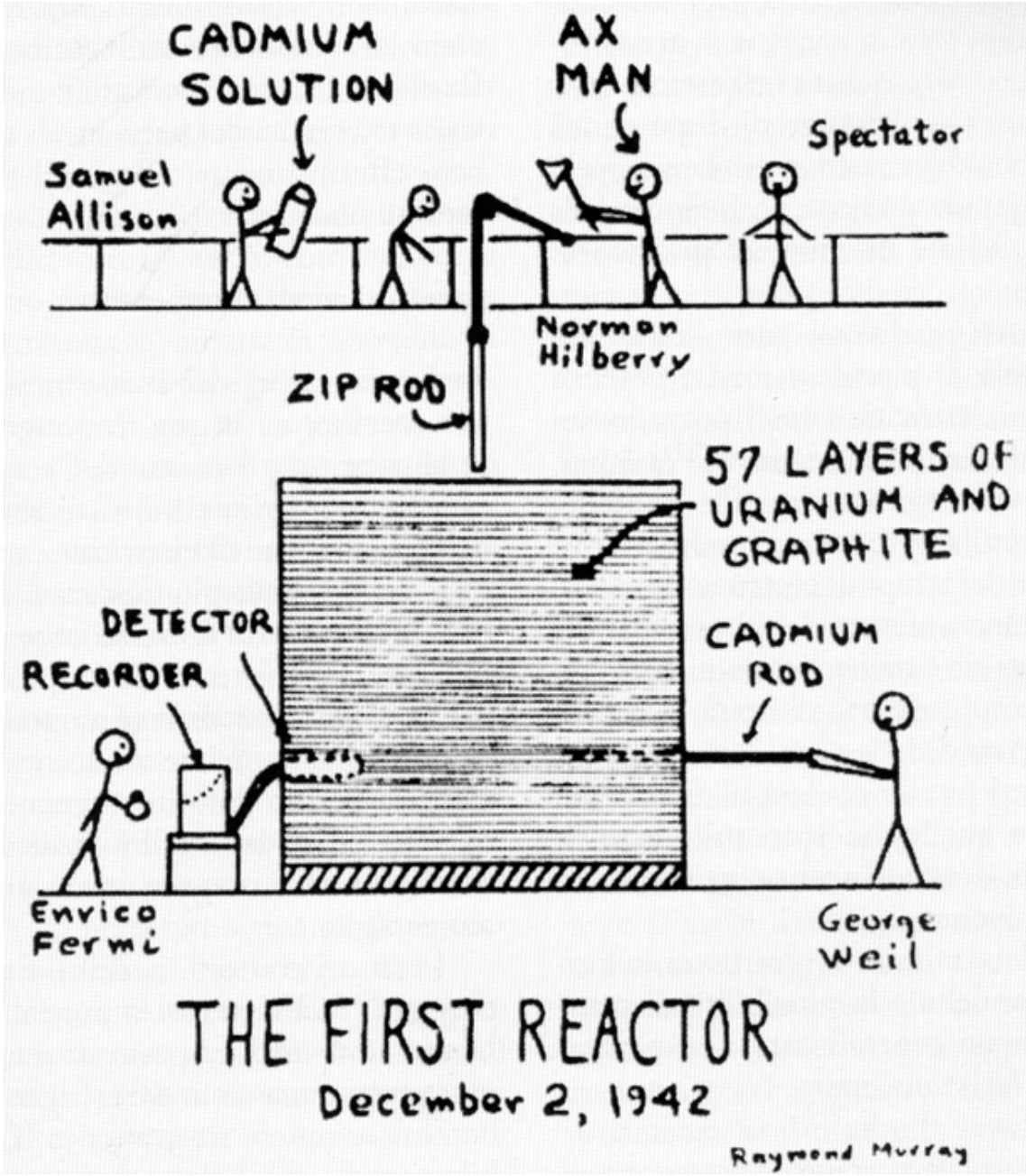
Experimental Reactor Physics: an historical perspective



I will be short ...


CADMIUM SOLUTION
AX MAN
Spectator
Samuel Allison
Norman Hilberry
ZIP ROD
57 LAYERS OF URANIUM AND GRAPHITE
DETECTOR
RECORDER
CADMIUM ROD
Enrico Fermi
George Weil
THE FIRST REACTOR
December 2, 1942
Raymond Murray

NUCLEAR SCIENCE and ENGINEERING

THE JOURNAL OF THE AMERICAN NUCLEAR SOCIETY

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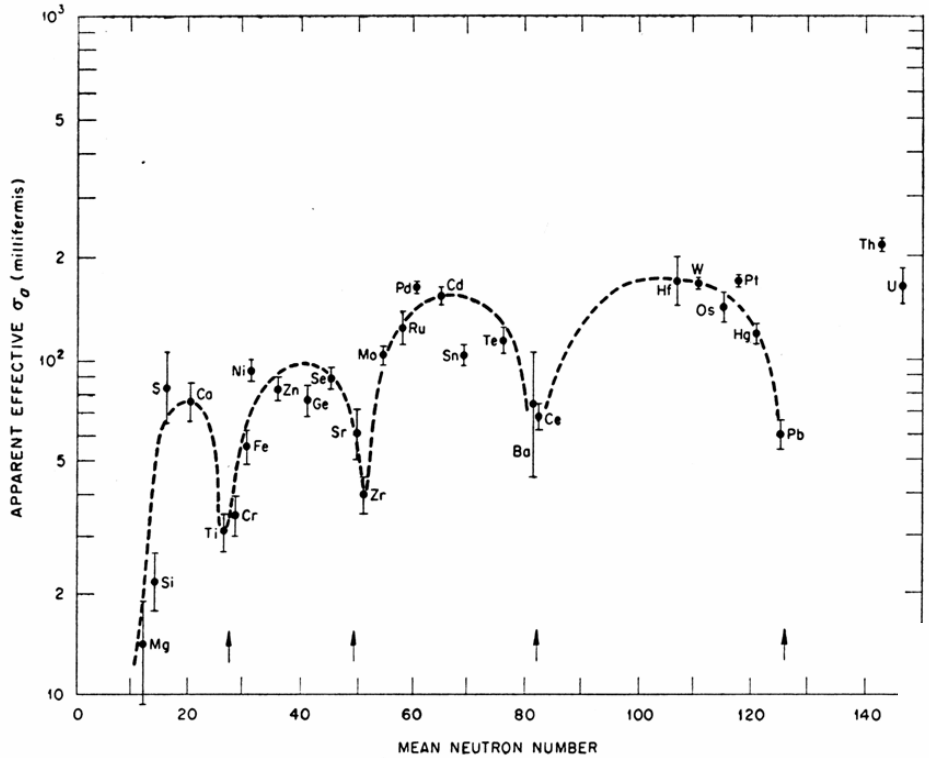
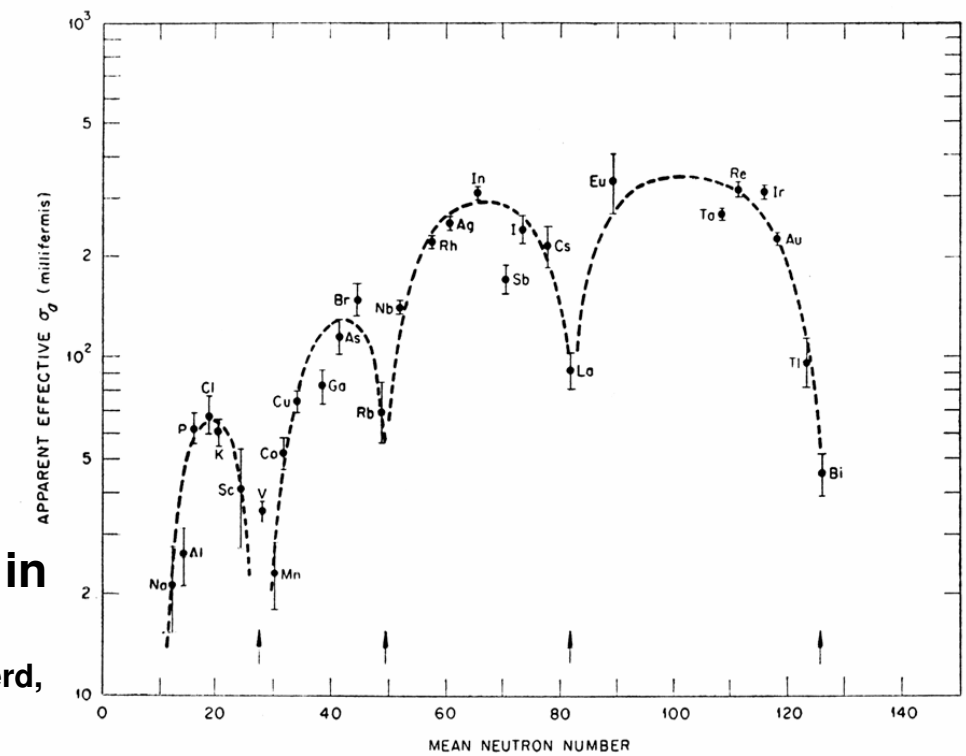


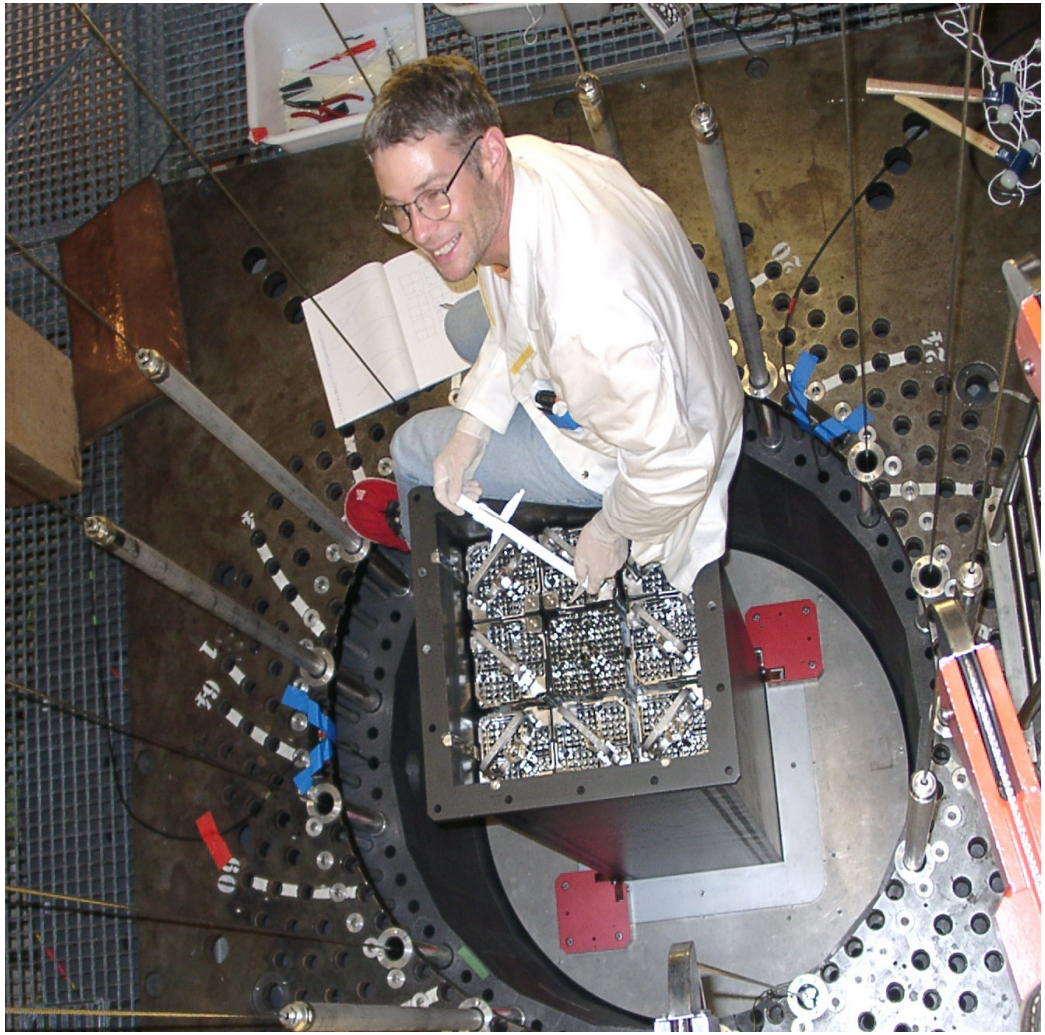
Effective capture cross-sections in ZEPHYR, even-Z elements.

(From J. E. Holmes, D. D. McVicar, H. Rose, R. D. Smith, and L. R. Shepherd, *PICG*, 5, 331 [1955].)

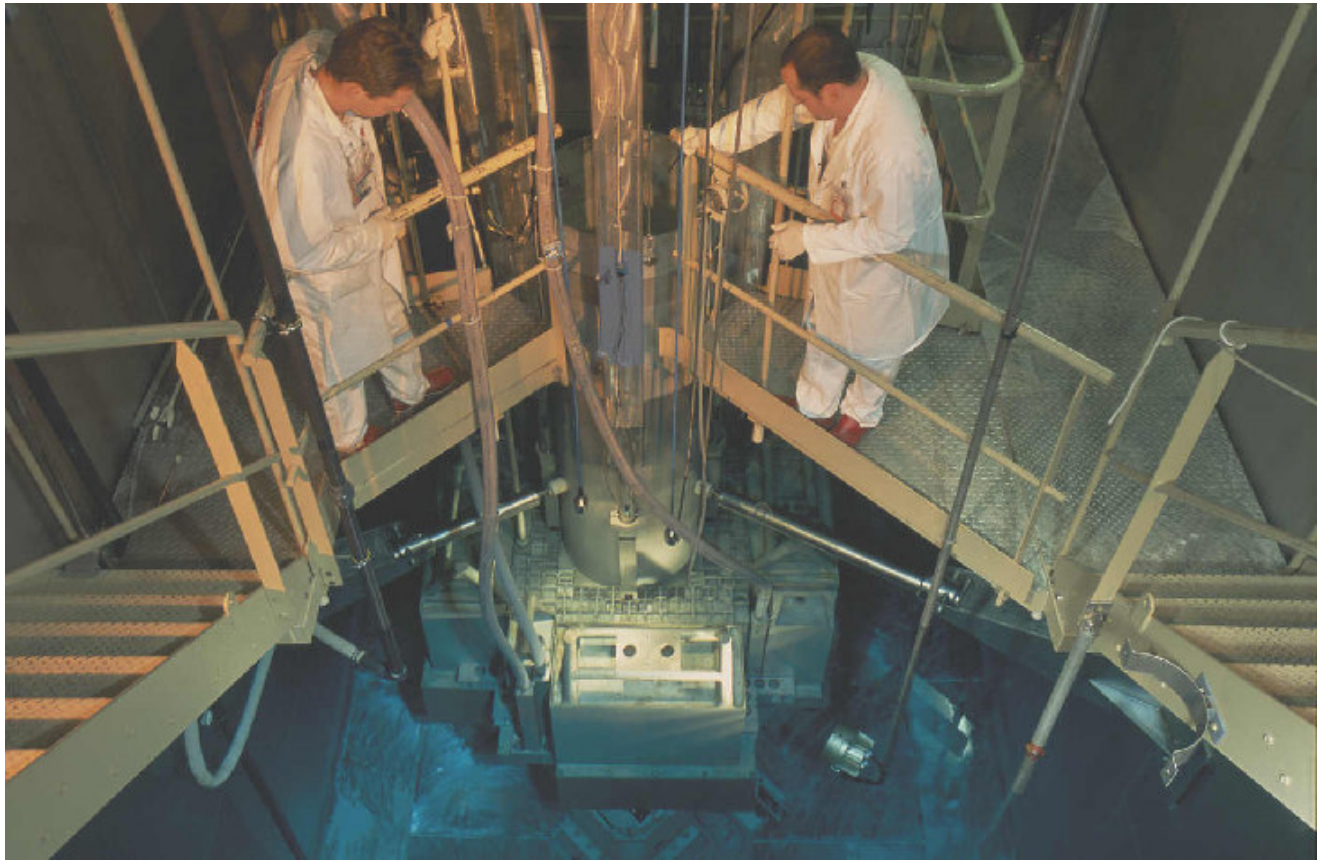


Effective capture cross-sections in ZEPHYR, odd-Z elements.

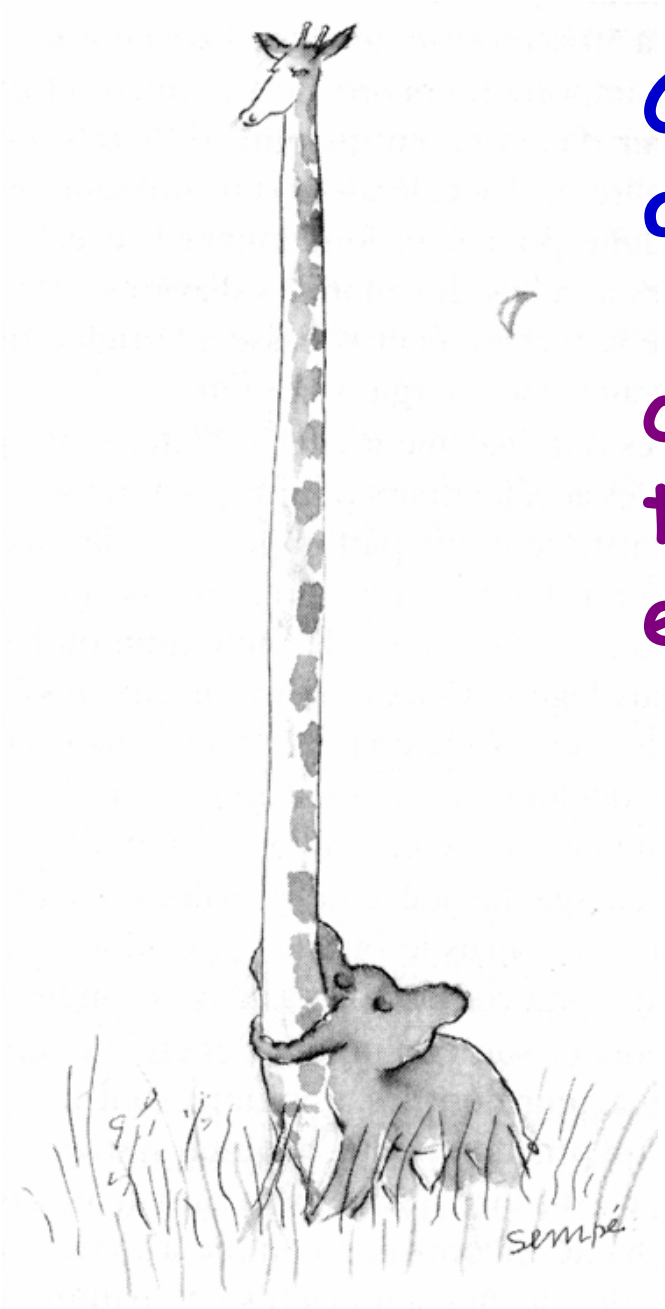
(From Homes, McVicar, Rose, Smith, and Shepherd, *loc. cit.*)



Top view of the LWR-PROTEUS (PSI) Core Configuration. The central test tank is arranged with 9 commercial BWR fuel assemblies (Westinghouse Atom SVEA-96+)

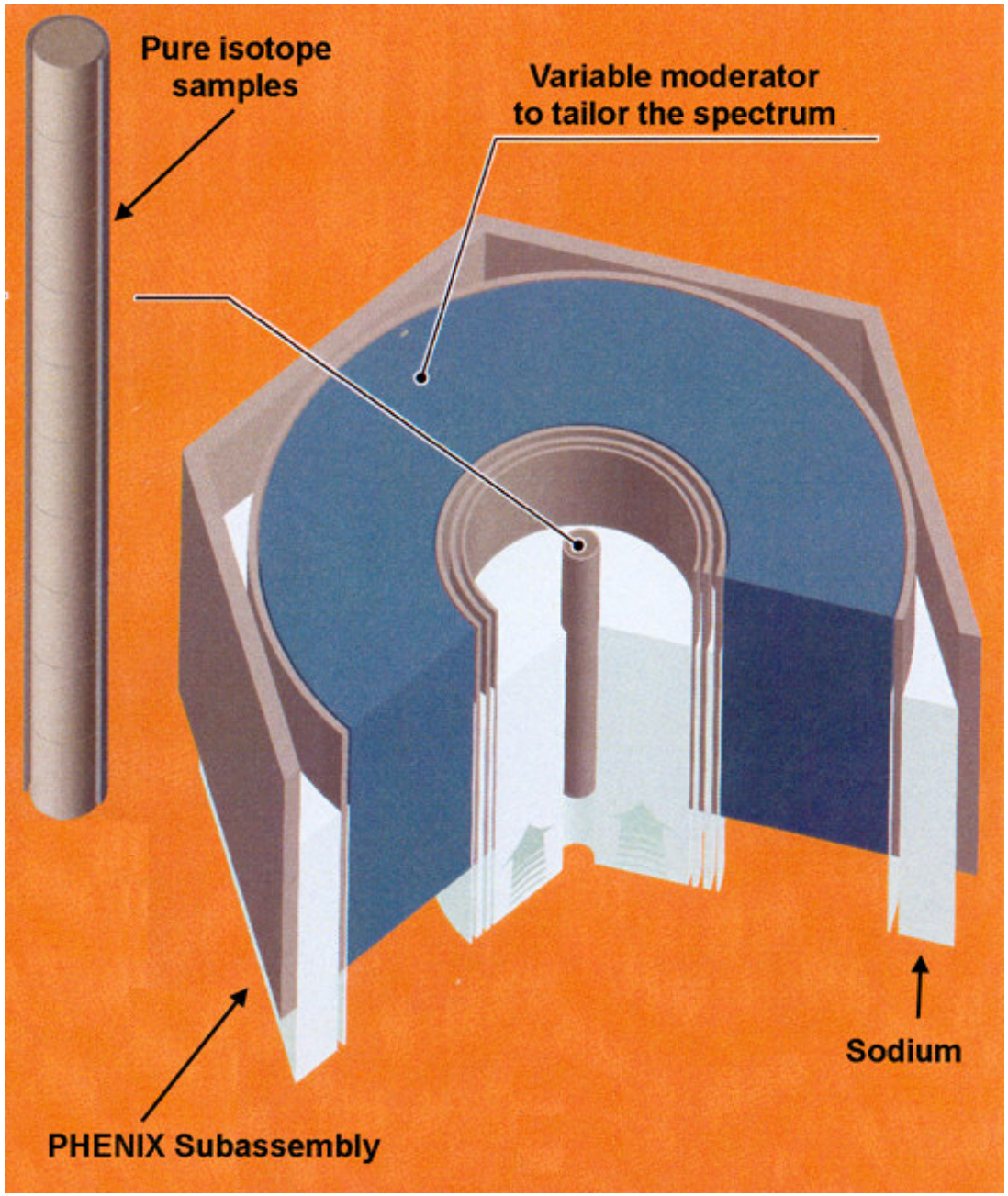


The MINERVE reactor at CEA-Cadarache is equipped with an oscillator for fresh or irradiated sample reactivity measurements with high accuracy



Coupling of an accelerator and of a nuclear reactor:

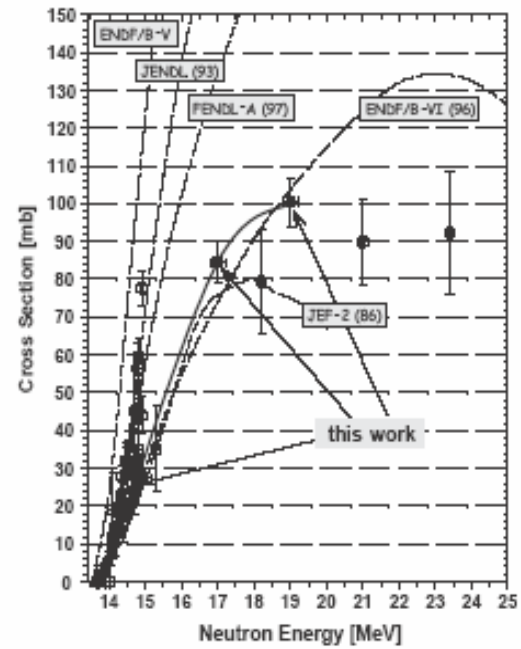
coupling against nature or the future of nuclear energy?



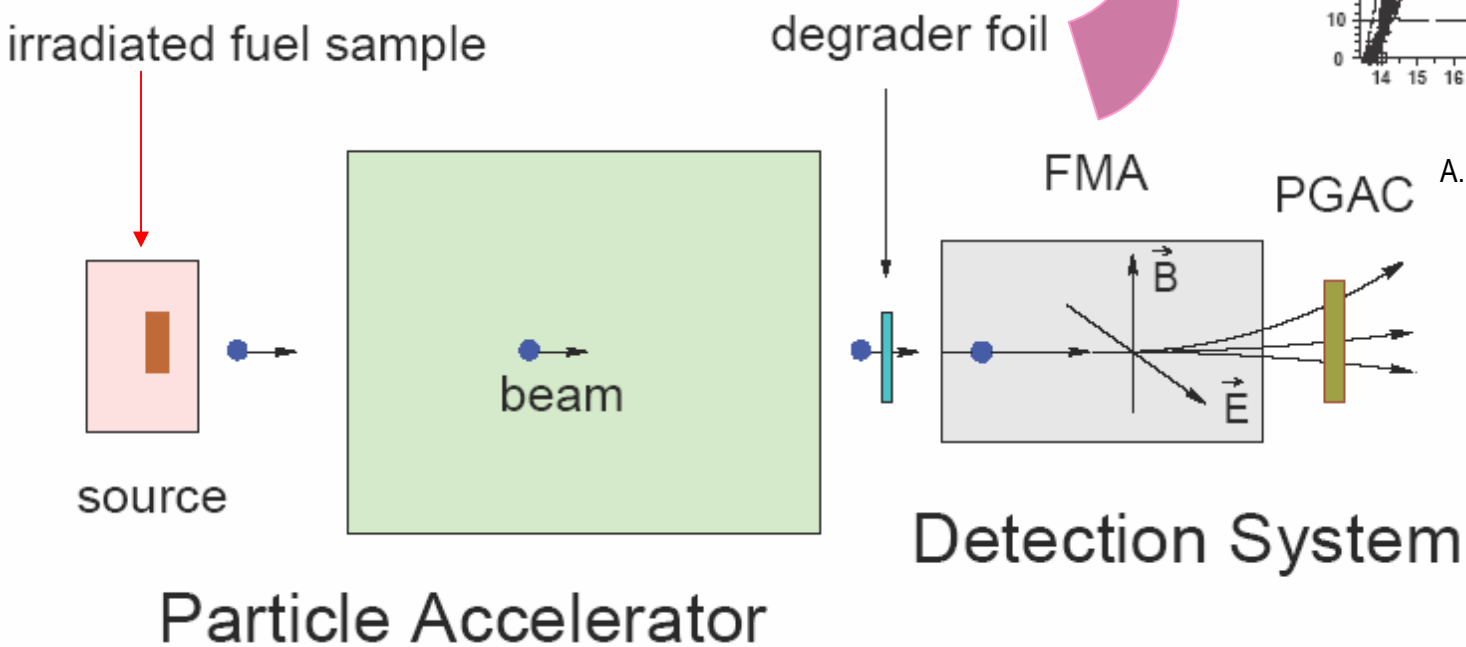
Transuranium pure sample irradiation in PHENIX in "Tailored" neutron spectra

AMS for TRU data measurements

$^{27}Al(n,2n)^{26}Al$



A. Wallner et al, EPJ **A17**, 2002



„If you can look into the seeds of time, and say which grain will grow and which will not, speak then to me“.

W. Shakespeare, Macbeth