

# Summary of Americium Workshop

## Held in Santa Fe, September 2007

Mark B. Chadwick, *X-1 Group Leader, LANL*

### *Outline:*

- Summary of workshop
- (n,2n) advances
- (n,capture)
- Future needs

***Thanks to:*** T. Kawano, M. Jandel, D. Vieira, J. Ullman, J. Becker, etc

# ~ 40 participants from LANL, LLNL, LBNL, LBNL + visitors from Japan, Belgium, Italy

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Reviewed ENDF/B-VII databases for  $^{241,242g,m,243}\text{Am}$

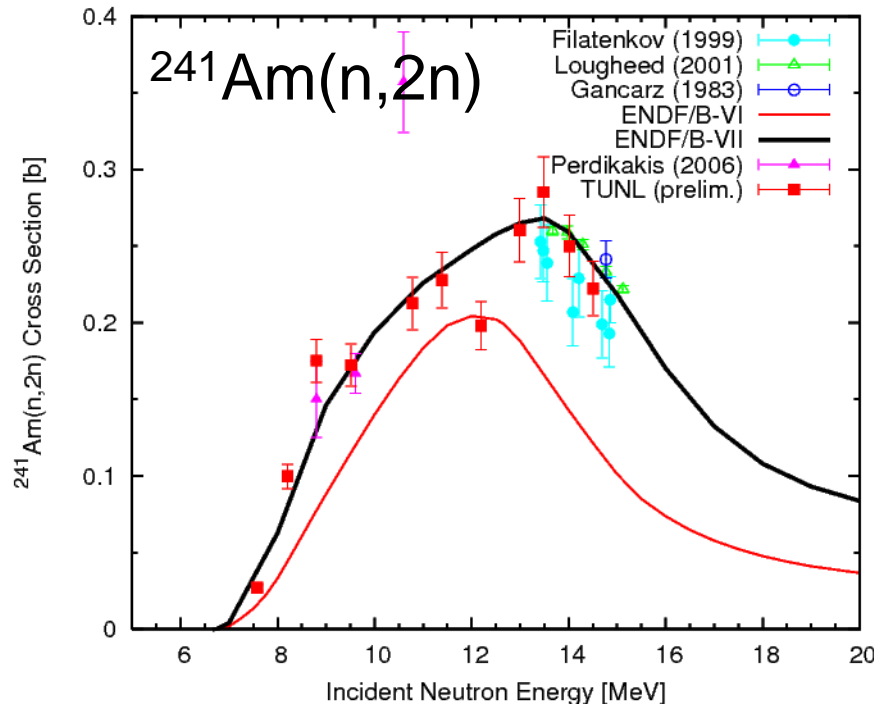
(n,2n) reactions and preequilibrium physics (Gadioli session)

Capture reactions

Fission reactions .... (preliminary PPAC data for  $^{242m}\text{Am}$ )

Meeting was notable for large presence of brilliant retirees....  
Wilhelmy, Barr, Lynn, Dietrich, Kerman, Michaudon, Blann,  
Gadioli, ...

# New $^{241}\text{Am}(n,2n)$ Measurements from LANL-LLNL-TUNL collaboration



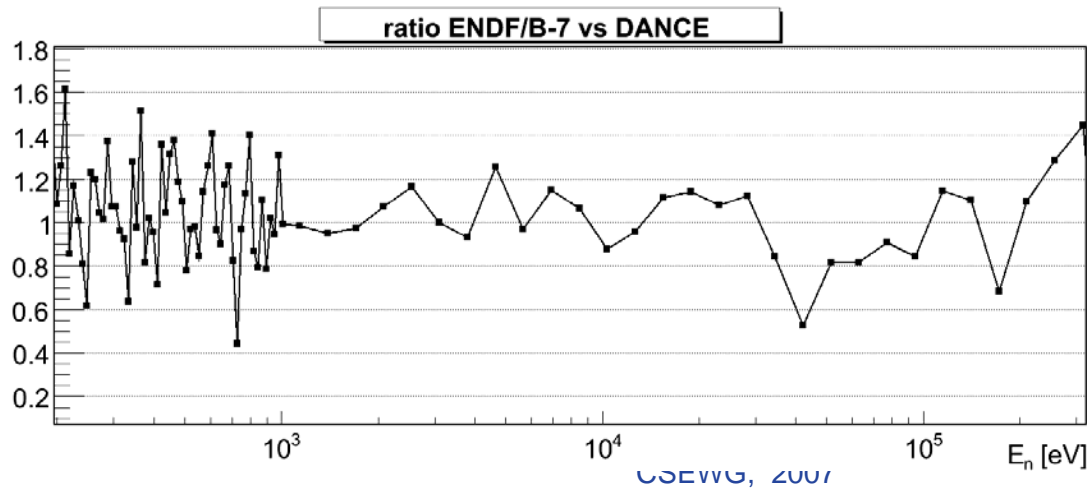
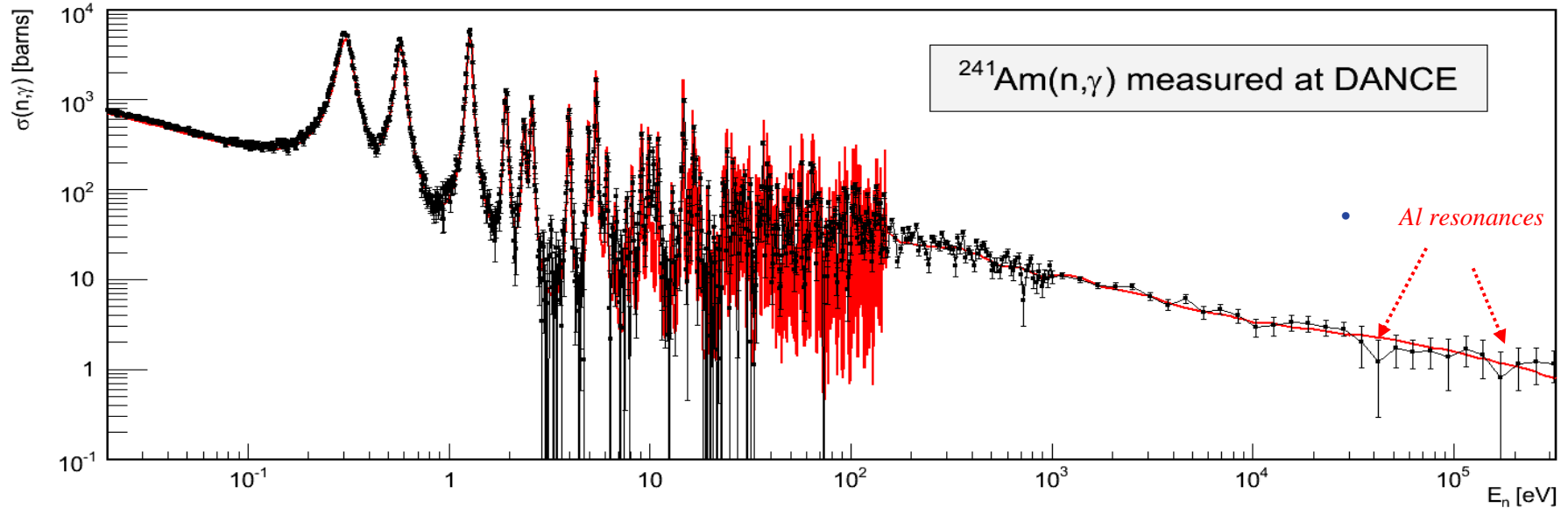
New data are preliminary, from the TUNL-Livermore-Los Alamos collaboration -**Tonchev, Becker, Vieira, et al.**

*(project supported by DOE/NNSA Stewardship Alliance Program)*

**Data confirm B-VII  $n,2n$**

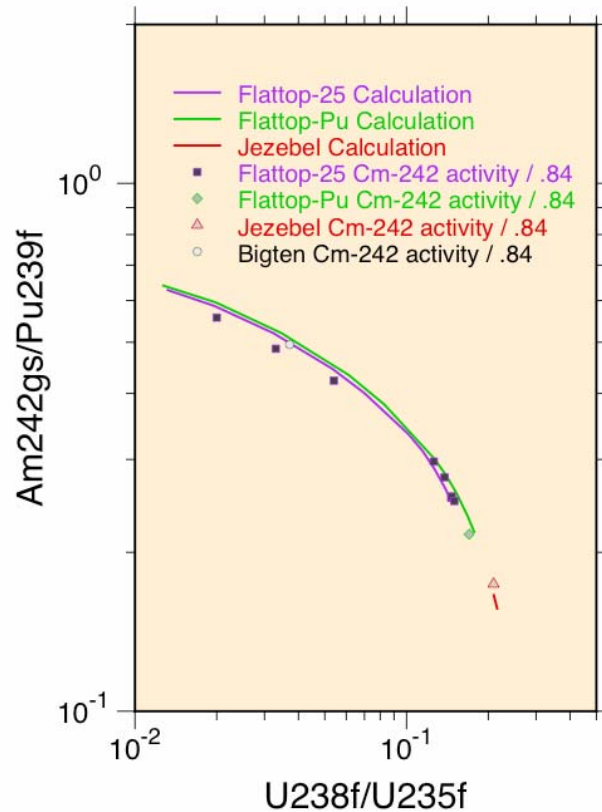
**New measurements from Arjan Plomen @ Geel seen to be released; & further refined**

# $^{241}\text{Am}(n,\gamma)$ capture: New DANCE data also confirm ENDF/B-VII evaluation



Blind ENDF/B-VII prediction (Kawano, Chadwick) before measurement was made

# $^{241}\text{Am}(n,\gamma)$ : We did have integral validation data though (critical assemblies, Barr)



# Main Americium Needs in Future

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Update thermal  $^{241}\text{Am}$  information

Update  $^{241}\text{Am}$  resonances using DANCE data

$^{241}\text{Am}(n,2n)$ : finalize TUNL data; utilize IAEA standards (eg Au  $n,2n$ );  
Further reduce uncertainties through use of Geel data; motivate more  
Geel measurements from 17 MeV down to 14 MeV

Can structure community help with  $^{240}\text{Am}$  g-ray decay data?

$^{243}\text{Am}$   $n,2n$  - we have info at 14 MeV (Gancarz); could we do a TUNL  
measurement over all energies including threshold?

$^{242\text{m}}\text{Am}$   $n,g$      $^{243}\text{Am}$   $n,g$  from DANCE

Eventually we'd like to see DANCE data to higher energies (above  
300 keV), with reduced uncertainties

Study  $^{240}\text{Am}$  - see Brown talk; update LANL work too

# Phil Young's work on Pu isotopes (240,238)

