Atlas of Neutron Resonances

S.F. Mughabghab

National Nuclear Data Center, Brookhaven National Laboratory

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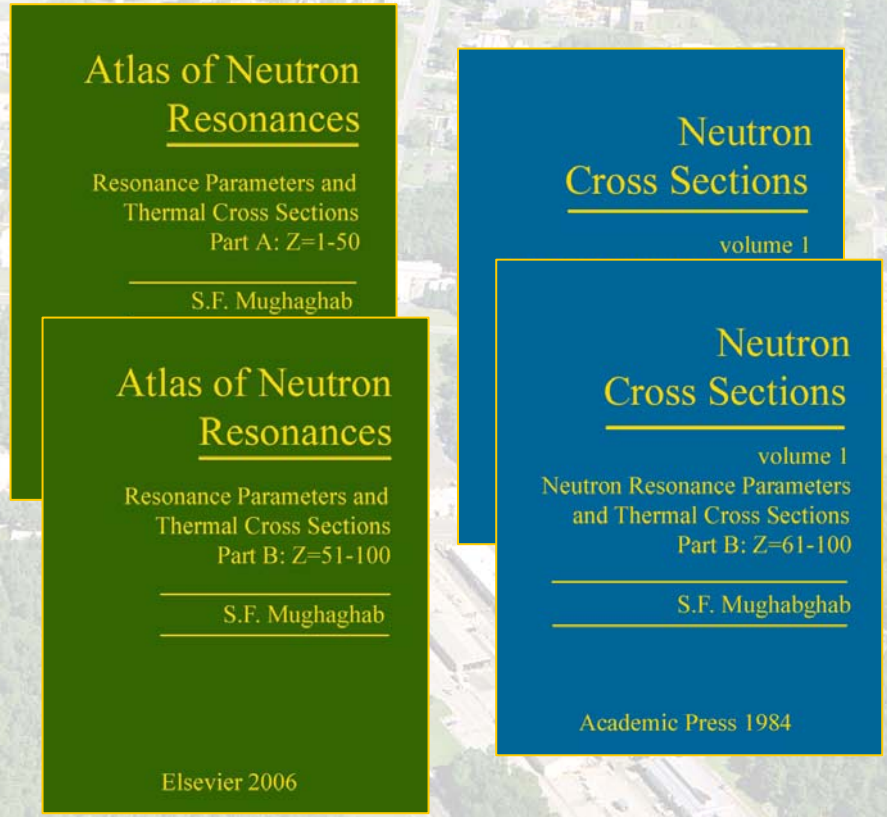
Contents

- Individual resonance parameters for nuclei Z = 2 -100
- Thermal cross sections, coherent scattering amplitudes for Z = 1 – 100
- Average resonance parameters, level spacings, capture widths, neutron strength functions, photon strength functions for s-, p-, d-wave neutrons, Maxwellian average 30-keV capture cross sections, and resonance integrals
- Updated introduction stressing the systematics of average resonance parameters and tabulating nuclear level density parameters



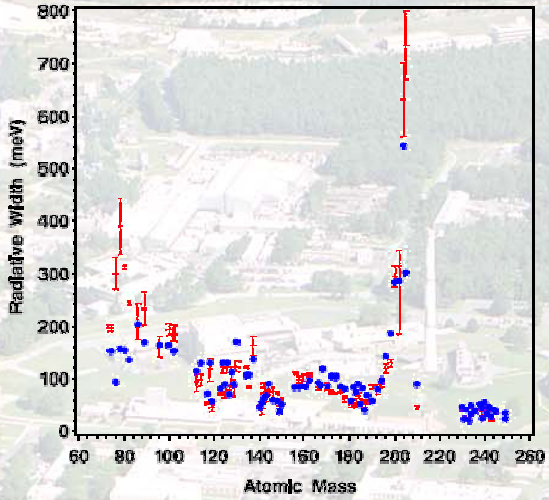
Atlas of Neutron Resonances

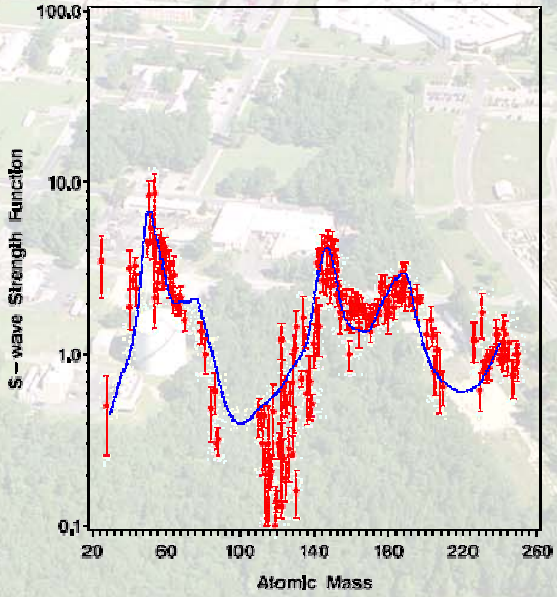
History

- ✓ The 1st edition of BNL-325 appeared in 1955; it was prepared by Donald J. Hughes and John A. Harvey
- ✓ BNL-325 has been widely used and frequently referenced
- ✓ Atlas of Neutron Resonances represents the 5th edition of BNL-325

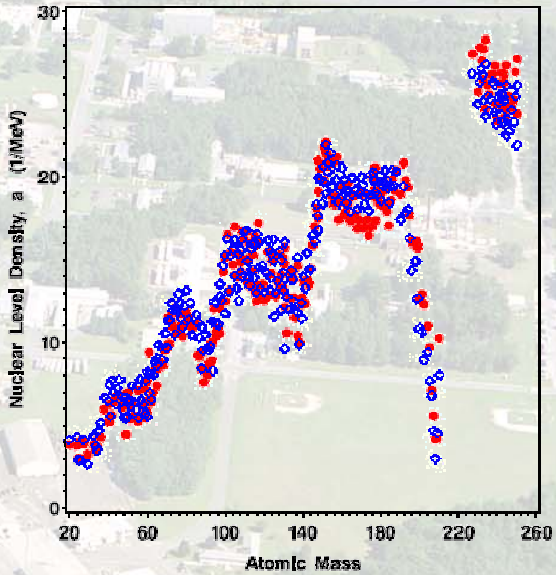
Features

- ✓ Atlas of Neutron Resonances contains recommended values only
- ✓ Thermal cross sections
- ✓ Coherent scattering amplitudes
- ✓ Average resonance parameters
  - Average radiative widths
  - Level spacings
  - Neutron strength functions for s-, p-, d-partial waves
  - 30-keV Maxwellian average capture cross sections
  - Resonance integrals
- ✓ Consistency between individual resonance parameters and thermal constants as well as the average resonance parameters





- ✓ Expanded introduction to include
  - Level density parameters
  - E1 photon strength functions
  - Predictions of nuclear models compared with average resonance parameters



Availability

- ✓ Atlas of Neutron Resonances (to be published in March 2006) will be a prime source handbook that meets the needs of researchers and evaluators
- ✓ For future information go to www.nndc.bnl.gov/atlas