



# KLAUS H. GUBER

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## EXPERIENCE

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**2003 to present** Distinguished Staff member in the Reactor and Nuclear Systems Division of the Oak Ridge National Laboratory

- Neutron induced cross section measurements for the NNSA Nuclear Criticality Safety Program (NCSP) at the pulsed neutron sources ORELA, GELINA and RPI. Manage and guide the experimental nuclear data program for the NCSP in the conduct and scheduling of nuclear cross section measurements and coordinate with international partners at JRC of the European Union.
- Manager of the team to restart ORELA after yearlong shut down due to technical difficulties.

**1997 – 2002** Staff member in the Nuclear Science and Technology Division of the Oak Ridge National Laboratory

- Neutron induced cross section measurements for the NCSP of the NNSA/DOE at the pulsed white neutron source ORELA. This includes transmission, fission, capture and scattering time-of-flight experiments.

**1994 - 1997** Post-doc in the Physics Division of the Oak Ridge National Laboratory

- Establishing an astrophysics program at ORELA to measure neutron capture and total cross section for  $s$ -process studies to understand the heavy elements nucleosynthesis in stars.

**1994** Post-doc of the Joint European Institute for Transuraniums, Karlsruhe, Germany

- Improvement of a multi wavelength pyrometer, and development of the data evaluation software

**1988 – 1992** Nuclear Research Center Karlsruhe, Germany, research physicist to obtain PhD.

- High precision neutron capture cross section measurements. Construction of scintillation and neutron counters, vacuum technology, and the handling of radioactive material. Assembling of the Karlsruhe  $4\pi$ -BaF<sub>2</sub>-Detector and the implementation of a high-speed ADC-System in the data acquisition electronics of the detector, consisting of 2 x 42 channels for separate pulse height and time of flight analysis.

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## EDUCATION

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**1993** University of Karlsruhe, Germany, Ph.D. Nuclear Physics

- Thesis: Experimental Determination of the Stellar Neutron Capture Cross Sections of  $^{148}\text{Sm}$  and  $^{150}\text{Sm}$  and the Consequences for the s-Process (explanation of the origin of the heavy elements).

**1980 – 1988** University of Karlsruhe, Germany; Diploma

- Majors nuclear and subatomic physics, and relativity
- These studies were concluded with a thesis related to the Karlsruhe  $4\pi\text{-BaF}_2$  Detector: Optimization of its individual detector modules and experimental measurements.

**1967 – 1979** European School Karlsruhe, Germany; European baccalaureate

- Fluent in English, German and French, basic Italian

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## AWARDS AND ACKNOWLEDGEMENTS

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- *Lockheed Martin* Corporate NOVA Award 1998
- Technical Achievement Award 1998 from *Lockheed Martin Energy Research Corp. and ORNL*
- Author of the Year 1998 of *Lockheed Martin Energy Research Corp. and ORNL*
- *NNSA Award in 2007* for successful restoration of ORELA operations



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## PUBLICATIONS

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- Google Scholar: 5671 citation, h-index 23
- Selected Publications:
  - K. H. Guber, R.R. Spencer, P.E. Koehler, and R.R. Winters, Phys. Rev. Letters, Vol. 78, p. 2704 (1997) Title: **New <sup>142,144</sup>Nd (n,γ) Cross Sections and the s-process Origin of the Nd Anomalies in Presolar Meteoric Silicon Carbide Grains.**
  - P. E. Koehler, F. Bečvář, M. Krtička, J. A. Harvey, and K. H. Guber, Phys. Rev. Lett. 105, 072502 (2010), Title: **Anomalous Fluctuations of s-Wave Reduced Neutron Widths of <sup>192,194</sup>Pt Resonances.**
  - M. B. Chadwick et al., Nuc. Data Sheets, 112, 2887 (2011), Title: **ENDF/B-VII.1 Nuclear Data for Science and Technology: Cross Sections, Covariances, Fission Product Yields and Decay Data.**
  - D.A. Brown, M.B. Chadwick, R. Capote, A.C. Kahler, A. Trkov, M.W. Herman, et. al., Nuclear Data Sheets 148, 1-142 (2018), Title: **ENDF/B-VIII.0: the 8th major release of the nuclear reaction data library with CIELO-project cross sections, new standards and thermal scattering data.**
  - P. Schillebeeckx, B. Becker, Y. Danon, K. Guber, et al., Nuclear Data Sheets, 113, 3054 (2012), Title: **Determination of Resonance Parameters and their Covariances from Neutron Induced Reaction Cross Section Data.**
  - K. Wisshak, K. Guber, F. Käppeler, J. Krisch, H. Müller, G. Rupp and F. Voss, Nucl. Instr. Meth. A292, 595 (1990). Title: **The Karlsruhe 4π Barium Fluoride Detector.**