Anthony Alberti

Education

Oregon State University Feb. 2016 - Present

Ph.D. Nuclear Engineering
Dissertation Title, "*Investigations of the Proper Generalized Decomposition in Reactor Physics*"
Expected Graduation, December 2018

Oregon State University Jan. 2014 - Feb. 2016

M.S. Nuclear Engineering
Thesis Title, "*Steady State Modeling of the Minimum Critical Core of the Transient Reactor Test Facility*"

Purdue University Aug. 2009 - Dec. 2013

B.S. Nuclear Engineering
Minor Mechanical Engineering
American Nuclear Society (ANS) Student Section:

- Vice President
- Corporate Relations Chair
- Sophomore Representative
- Member

Experience

Oregon State University Feb. 2016 - Present
Ph.D. Graduate Research Assistant *Corvallis, OR*

· Advising professor, Todd Palmer.
· Funding from Idaho National Lab (Internship Sum. 2016).
· Investigating *a priori* parameterized model reduction applications in reactor physics.
· Proper generalized decomposition is an *a priori* model reduction method that allows for on the fly resolution refinement.

Oregon State University Jan. 2014 - Feb. 2016
M.S. Graduate Research Assistant *Corvallis, OR*

· Advising professor, Todd Palmer.
· Completed M.S. research in conjunction with Idaho National Lab (Internship Sum. 2015).
· A 3D FEM reactor physics model was developed to:
  - Identify the fundamental neutronic properties of the Transient Reactor Test Facility.
  - Quantify effects of spatial homogenization and angular discretization.
  - Establish functional treatment of diffusion coefficients.
  - Provide accurate base model for future transient simulations.

Purdue University June. 2013 - Dec. 2013
Undergraduate Research Assistant *W. Lafayette, IN*

· Advising professor, Won Sik Yang.
· Conducted fuel cycle analysis for the first stage of a proposed two stage fast reactor system.
· Adapted 1000 MW_{th} Advanced Burner Reactor design for breakeven core for Uranium/Plutonium consumption.
· Utilized Argonne National Lab fuel cycle analysis code suite DIF3D/REBUS3 with MC**2-3 as a cross section generator.

General Atomics Sum. 2012, 2011
Summer Intern in Inertial Confinement Fusion (ICF) *San Diego, CA*

· Summer 2012:
  - Responsible for automation of Uranium and Gold sputter coaters.
  - Authored data collection and postprocessing programs in LABVIEW.
· Summer 2011:
  - Researched very thin permeation barrier pressure profiles for ICF targets.
  - Co-authored research publication (listed below) and presentation.

Publications

1. A. Alberti, T. S. Palmer, J. Ortensi, and M. D. DeHart, *Calculation of the TREAT Minimum Critical Core Using MAMMOTH and SERPENT.* PHYSOR, Sun Valley, Idaho 2016. American Nuclear Society.
2. A. Alberti. *Steady State Modeling of the Minimum Critical Core of the Transient Reactor Test Facility*, Masters of Science Thesis, Oregon State University, Corvallis Oregon, October 2015.
3. J. Ortensi, A. Alberti, Y. Wang, F. Gleicher, S. Schunert, and T. Palmer. *Methodologies and Requirements for the Generation of Physics Data Inputs to MAMMOTH Transient Simulation in Support of the Transient Reactor Test Facility INL/LTD-15- 36265.* Technical Report, Idaho National Laboratory, September 2015.
4. J. Ortensi, M. DeHart, F. Gleicher, Y. Wang, and A. Alberti. *Full Core TREAT Kinetics Demonstration Using Rattlesnake/BISON Coupling Within MAMMOTH INL/EXT-15-36268.* Technical Report, Idaho National Laboratory, August 2015.
5. M. Schoff, D. Steinman, A. Alberti, H. Huang, and A. Nikroo. *Atomic Layer Deposition Coating for Permeation Half-Life Control of GDP Ablator Capsules.* Fusion Science and Technology. March/April 2013; 63:136-141.

Technical Skills

Proficiency in the following:
- Python, C++, MATLAB, LaTeX, Unix
- GitHub, VIM, Emacs

Experience using the following engineering software packages:
- CUBIT, Solidworks
- MOOSE, SCALE6.1, MCNP, CASMO/SIMULATE, DIF3D/REBUS/MC**2-3