

Shu Wang

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PhD student in electrical engineering. Passionate about HPC, numerical method and machine learning, with strong technical and interpersonal skills.

Education

- **University of New Mexico** **Albuquerque, NM**
PhD candidate in EE(minor in Applied Mathematics), GPA:4.11/4.0
Computational Science and Engineering Certificate
2015 Jan–Present
- **Beijing University of Aeronautics and Astronautics** **Beijing, China**
M.E. in Optical Engineering, GPA:89.2/100, Rank:2/51
Dissertation: Measurement of polarization cross-coupling in fiber coil based on OCDP
2011 Sept–2014 Jul

Research Projects

- **Computational Electromagnetics** *Prof. Z.Peng, ECE, UNM*
Paralle-in-Time Algorithms for Maxwell's Equations
 - Discontinuous Galerkin FEM and Parallel-in-time algorithms for Maxwell equations
 - Parallel-in-time for nonlinear circuit simulation
 - Schwarz/Schur type domain decomposition in time**Frequency Domain Decomposition Method**
 - Parallel adaptive Schwarz preconditioned DDM of multi-solver for electromagnetics
 - Design of a novel optimal transmission condition without clement unknowns for parallel multi-solver
- **Applied Math** *Prof. J. H. Chaudhry, Math, UNM*
Least Square Finite Element Method for Convection-Diffusion Equation
 - A-posteriori error/Stability analysis of Least Square/discontinuous Galerkin FEM for Convection-Diffusion Equation
- **Parallel Computing** *Dr.Robert Robey, Los Alamos National Lab*
Parallel optimization of ParaReal Algorithm for parabolic PDE
 - Implement and optimize the parareal algorithm by vectorization, multi-threading and on distributed memory environments
- **Photonics** *Prof. N. Gregersen, Denmark Technical University*
Optical Simulations of Structured Materials and the Implementation of PML
 - Eigenmode expansion to model single-photon emission in planar waveguide, numerical PML
- **Optical Science** *Prof. J.Jin, Beihang University*
White-Light Interferometer in Polarization Cross-coupling Test
 - High-order birefringence dispersion in photonic crystal fiber
 - Kalman filter based fiber optic gyroscope demodulation system

Technical Skills and Courses

- **Programming Languages:** Proficient in: C/C++, Fortran, Python, Matlab, TeX
- **Industry Software Skills:** SolidWorks, COMSOL, SPICE
- **Teaching Skills:** Co-instructor for ECE-563(Computational Electromagnetics, Fall'17)
- **Courses:** Parallel Processing, Machine Learning, Numerical PDE/ODE, Advanced Finite Element Method, Antennas for Communication

Publications

Journals.....

- S. Wang, Z Peng. Space-Time Parallel Paradigm for High-fidelity EM-simulation: IEEE Transactions on Antennas and Propagation, Sep, 2017(Submitted).
- S. Wang, Z Peng. Highly Scalable Domain Decomposition Method based Multi-solver for Multiple Antennas Analysis: IEEE Antennas and Wireless Propagation Letters, Sep, 2017 (Submitted).

- Z.Peng, S.Wang, etc, High-fidelity, high-performance computational algorithms for intra-system electromagnetic interference analysis of IC and Electronics: IEEE Transactions on Components, Packaging and Manufacturing Technology, Invited paper for IEEE T-CPMT Special Topics Section on "Address Signal and Power Integrity in Future Generation Systems (DOI:10.1109/TCPMP.2016.2636296, 201)
- S.Wang, J.Jin, Novel dispersion compensation method for cross-coupling measurement in PM-PCF based on OCDP: Optical Fiber Technology, 19(2013)495-500
- Z.M.Sun, S.Wang, etc, Analysis of Shupe effect in polarization-maintaining photonic crystal fiber-optic gyroscope: Optical Review(Vol.21,Issue 3,2014), pp 276-279

Conferences.....

- S. Wang, Z Peng. Space-Time Parallel Computation for High-fidelity EM-simulation: 2018 International Applied Computational Electromagnetics Society (ACES) Symposium, Mar 24-29, 2018, Denver, U.S.
- S. Wang, Z Peng. Space-Time Parallel Computation for Maxwell's Equations: International Conference on Electromagnetics in Advanced Applications (Finalist in Poster Session), Sep 11-15,2017, Verona, Italy
- Y.Shao, S.Wang, etc, Hierarchical modeling and scalable algorithms for in-situ characterization of 3D IC packages: IEEE/ACES and ICWITS 2016 (DOI.10.1109/ROPACES.2016.7465410)
- S.Wang, J.Jin, etc, Novel bidirectional path measurement of polarization cross-coupling distribution in PMF: Proc. SPIE 8914, ISPD1 2013(DOI:10.1117/12.2034730)

Talks.....

- A Space-Time Parallel Domain Decomposition Method for High Fidelity Electromagnetic Analysis",IEEE AP-S, San.Diego, US. Jul 2017
- "Scalable Full-Wave Algorithms for Signal Integrity Analysis of 3D ICs and Packages",IEEE AP-S, Puerto Rico, US. Jun 2016

Professional Memberships and Honors

- SIAM/IEEE student member
- China National scholarship for Graduate Students (2013 Beijing)
- Excellent Graduate Student Award (2011-2012 Beijing)