Claudia Castro-Castro

Southern Methodist University P.O. Box 750156 – Dallas, TX – USA 75275

📱 +1 (469) 834 4089   •   ✉ ccastrocastr@smu.edu   •   **in** ckcastrocastr

Recent Ph.D. in Applied and Computational Mathematics from Southern Methodist University. Passionate about innovation with leadership and team work experience in technical environments.

Led research analyzing the control of light in fiber optic cables. Worked with engineers and physicists performing data analysis and building numerical models to improve the design of optical fibers.

Technical and Personal skills

○ Programming Languages:

Proficient: C++, Matlab, Python, LaTeX, Mathematica; Intermediate: Bash, Maple, R; Novice: MySQL, HTML5

○ Spoken Languages:

English (professional working proficiency), French (elementary reading and conversation)

○ Leadership:

Member of Toastmasters International since Oct. 2015 (Treasurer since Oct. 2016), Vice-president of Society of Industrial and Applied Mathematics student chapter. Co-organizer Graduate Student Seminar, Aug. 2016-May 2017

Experience

Graduate Research Assistant — Dallas, Texas
Southern Methodist University — *2014-2017*

○ Utilized mathematical modeling and numerical simulations to specifically show how nonlinearity, coupling, geometric twists, and balanced gain-loss relate to the existence, stability and dynamic character of nonlinear optical modes.

○ Explored the effects of the inherent variability on the fiber core diameter (randomness) by building a statistical understanding of the formation of low or high amplitude (localized) states.

Summer Internship — Los Alamos, New Mexico
Los Alamos National Laboratory — *2015*

○ Worked in a team of engineers and physicists to numerically simulate light dynamics within high powered optical fibers.

○ Modeled dispersion, including the effect of randomness, with high-order symplectic integration methods.

Graduate Teaching Assistant — Dallas, Texas
Southern Methodist University — *2013-2016*

○ Led Matlab projects and held discussions on assignments for undergraduate scientific computing.

○ Guest lecturer for undergraduates in the discrete mathematics class.

Education

Ph.D. Computational and Applied Mathematics — Dallas, Texas
Southern Methodist University — *2013-2017*

Cumulative GPA: 3.82

M.S. Applied Mathematics — Gto., Mexico
Center for Research in Mathematics (CIMAT) — *2011-2013*

B.S. Applied Mathematics — Ensenada, Mexico
Universidad Autónoma de Baja California (UABC) — *2006-2010*

Publications

C. Castro-Castro et al., Light dynamics in nonlinear trimers and twisted multicore fibers, Journal of Nonlinear Optical Physics & Materials, Volume No.25, Issue No. 04. 2017 arXiv link

A. B. Aceves, C. Castro-Castro, et al., Optical bullets in 2-dimensional fiber arrays, Photonics and Fiber Technology, Optical Society of America, 2016 OSA link