

LOGAN HART

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EDUCATION

Ph.D. in Mathematics

August 2019 -

Georgia Institute of Technology
College of Science

Bachelor of Science in Mathematics

August 2015 - May 2019

Louisiana State University
College of Science, GPA: 4.06

High School

August 2011 - May 2015

Catholic High School, Baton Rouge, LA

PUBLICATIONS AND PROJECTS

The maximal current carried by a normal/superconducting interface in the absence of magnetic field

August 2017 - August 2019

To appear in EJAM

- This is a jointly written paper with Professor Yaniv Almog (ORT Braude College, Israel). Modeling a normal/superconducting interface, we consider a semi-infinite wire whose edge is adjacent to a normal mater, assuming asymptotic convergence, away from the boundary, to the purely superconducting state. We obtain that the maximal current which can be carried by the interface diminishes in the small normal conductivity limit.

Superstability of Semigroups

May 2018 - December 2018

Pre-print - See website for paper

- This is a jointly written paper with Professor Frank Neubrander (LSU). We study strongly continuous semigroups that decay faster than any exponential but are not necessarily nilpotent. In particular, we answer a question of A. V. Balakrishnan from 2005 by providing elementary physical examples of superstable semigroups. These examples are less artificial (in the context of semigroup theory) than the one given by G. Lumer in 2001.

Infant Metabolic Chamber Analysis

May 2017 - July 2017

See website for poster

- This summer research project improved the process of analyzing data from experiments on infant metabolism performed by researchers from Pennington Biomedical Research Center (PBRC) by creating a graphical user interface (GUI) in the Matrix Laboratory (MATLAB) programming software which allows researchers to study the data in various ways.

Body Shape Analysis

May 2017 - July 2017

- This summer research project helped eliminate the need for expensive medical procedures such as DEXA scans and X-ray scans. This was achieved by using inexpensive, three dimensional body scans to approximate the information gained from more expensive scans and to predict medical risks using the same inexpensive, three dimensional body scans.

CONFERENCES

Semigroup Operators: Theory and Applications

September 30 - October 05, 2018

Kazimierz Dolny, Poland

Presentation available on website

- Gave a presentation on the superstability of semigroups based on the aforementioned pre-print.

UNIVERSITY VISITS

- A further elaboration on the presentation given at the conference in Poland above.

WORK EXPERIENCE

Louisiana House of Representatives
Messenger/Page

April 2014 - June 2014

- Provided clerical support to all Louisiana House of Representative legislators during the 2014 regular legislative session.

GRADUATE COURSES

Courses: Ordinary Differential Equations (MATH 7320), Algebra I (MATH 7210), Algebra II (MATH 7211), Topology I (MATH 7510), Topics in Material Science (MATH 7384), Geometric Topology: Symplectic Geometry (7590), Differential Geometry (MATH 7550)

SKILLS AND INTERESTS

Interests Modeling, Simulation

Software Mathematica, MATLAB, Office Suite, LaTeX

AWARDS AND SUPPORT

Demarcus D. Smith III Undergraduate Scholarship

2016 - 2017, 2017-2018

- Louisiana State University

Pasquale Porcelli Undergraduate Scholarship

2018

- Louisiana State University

LSU Discover Undergraduate Research Grant

Summer 2018

- Louisiana State University