

Sami Siraj-dine

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PHD STUDENT

CERMICS, UNIVERSITÉ PARIS-EST, FRANCE

DYNAMICS OF ELECTRONS IN 2D MATERIALS

ADVISORS:

- Éric Cancès, CERMICS
- Clotilde Fermanian, LAMA Créteil
- Antoine Levitt, Inria Paris

Started Oct. 2017 - Expected Oct. 2020

PUBLICATION

COHERENT ELECTRONIC TRANSPORT IN PERIODIC CRYSTALS

submitted to Annales Henri Poincaré
arXiv:2002.01990

NUMERICAL CONSTRUCTION OF WANNIER FUNCTIONS THROUGH HOMOTOPY,

Journal of Mathematical Physics
DOI: 10.1063/1.5085753

EXPERIENCE

MASTER'S THESIS

INTERN AT CERMICS / INRIA PARIS

Numerical construction of Wannier functions for topological insulators
April - July 2017

RESEARCH INTERNSHIP

CEA (CENTRE FOR ATOMIC RESEARCH), PARIS

Construction of empirical potentials from ab-initio data through Machine Learning
January - August 2016

RESEARCH INTERNSHIP

ARGONNE NATIONAL LABORATORY, CHICAGO

Road traffic simulation - Stochastic generation of speed profiles for vehicles around intersections
July - December 2015

RESEARCH INTERNSHIP

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

Seismic reliability of Greek temple columns through Monte-Carlo simulation
April - July 2014

RESEARCH

INTERESTS

- Quantum transport of electrons in 2D materials
- Construction and localization of Wannier functions
- Topological insulators and properties

TALKS IN CONFERENCES

SIAM CONFERENCE ON MATHEMATICAL ASPECTS OF MATERIALS SCIENCE 2018,
MINISYMPOSIUM MS38: MODELING, ANALYSIS AND NUMERICAL COMPUTATION FOR 2D MATERIALS,
Numerical Construction of Wannier Functions for Topological Insulators

DENSITY FUNCTIONAL THEORY AND BEYOND,
WARWICK ESPRC SYMPOSIUM
Numerical Construction of Wannier functions

ATTENDED

QUANTUM TRANSPORT AND UNIVERSALITY,
SUMMER SCHOOL AND WORKSHOP, SEPTEMBER 16 - 25
Rome, Italy

XIX INTERNATIONAL CONFERENCE ON MATHEMATICAL PHYSICS, JULY 23 - 28 2018, AND
SOLID MATH SATELLITE MEETING, AUGUST 1 - 3 2018
Montréal, Canada

OBERWOLFACH WORKSHOP MATHEMATICAL METHODS IN QUANTUM CHEMISTRY, 18 MAR - 24 MAR 2018
Oberwolfach, Germany

MATHEMATICAL CHALLENGES IN QUANTUM MECHANICS, FEBRUARY 19-24, 2018
Rome, Italy

EDUCATION

MASTERS DEGREE

UNIVERSITÉ PARIS VI, FRANCE

Mathematical Modelling and Applications,
Numerical analysis and PDEs

ENGINEERING DEGREE

ÉCOLE DES PONTS PARISTECH, FRANCE

Applied Mathematics and Computer Science