CV TOMMASO FAZIO

RESEARCH TOPIC/s you apply for

Theoretical/computational study of defects in SiC and prospects in the field of Quantum Technologies.

Profile

Passionate master student in Theoretical Physics whose major interests reside in Quantum Mechanics, Quantum Optics, Quantum Thermodynamics and Condensed Matter Physics. I'm willing to learn and to apply what I've learned. I'm pretty punctual and precise.

Degree and skills

2016-2019 Master of Science in Physics (obtained on 23/07/2019)

Grade: 110/110 cum laude

Master thesis topic – Circuit QED and out-of-equilibrium Quantum Thermodynamics of two coupled Transmons

Description: Theoretical work about the out-of-equilibrium Quantum Thermodynamics of one and two coupled Transmons, whose interaction is

mediated through virtual excitations of a resonator coupled to both of them in the dispersive regime. Calculations show that an instantaneous quench performed on one of the Transmons has the strongest effect on the other in the pseudo-spin regime and for a particular value of the ratio between the Josephson and charging energies, which are their most important parameters.

This work has been presented in an invited seminar, called Circuit QED and out-of-equilibrium Quantum Thermodynamics of two coupled Transmons, at the Dipartimento di Fisica ed Astronomia of the Università degli Studi di Catania, for the research group Condensed Matter Physics and Quantum Technologies, on 11/10/2019. Further study on this system towards publication is on the way.
Thesis Advisor: Prof. G. M. Palma
Università degli Studi di Palermo,
Palermo

2013-2016 Bachelor's Degree of Natural Sciences in Physics

Grade: 110/110 cum laude

Bachelor thesis topic - Quantum Simulators and Quantum Random Walk
Description: Theoretical work about a few quantum systems that can be used as Quantum Simulators, like the Quantum Random Walk. Such systems are scientifically useful for enabling us to simulate complex quantum systems onto other quantum systems of known behavior.
Thesis Advisor: Prof. G. M. Palma
Università degli Studi di Palermo,
Palermo

2008-2013 Classical High School Diploma

Grade: 89/100

Drummer in a school event called Certamen and contestant in various soccer and volleyball school tournaments.
Participant in the Olympics of mathematics and physics, in which I ranked second.
Period in London during which I practiced oral English by studying and acting at the British International School.
Umberto I High School, Palermo

2005-2008 General secondary education

I studied the French language for all three years.
Michelangelo Buonarroti Secondary School, Palermo

2000-2005 General elementary education

Monti Iblei Elementary School, Palermo

SKILLS
Languages: English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	B2	B2	C2

Digital skills

- Good skills in programming languages such as C++ and Python
- Novice skills in the programming language Wolfram Mathematica and in using numerical methods
- Good skills in data analysis programs such as Origin Pro and SciDavis
- Experienced in using document preparation programs such as Latex and Microsoft Office

Communication and cooperational skills

- Good listening and good teamwork and cooperational skills for working in group during laboratory courses
- Good communication skills in English language, gained during a period in London when I was in high school

Other skills

- Drumming skills, gained self-taught
- Soccer and volleyball skills, gained self-taught

Working experience

02.2018-06.2018 Calculus tutor
Università degli Studi di Palermo, Palermo

Job description: Doing calculus exercises to a class of first-year physics students, including clarifying doubts and answering possible questions.

Sector: Education, Pedagogy, Science

Academic Background

Advanced Quantum Mechanics
Advanced Condensed Matter Physics
Quantum Optics
Field-Matter Interaction
Quantum Field Theory
General Physics Laboratory (mostly spectroscopy)
General Relativity
Quantum Thermodynamics
Statistical and Complex Systems Physics

Driving License: B