Sapienza Rome Foundation

Sapienza Rome Foundation was founded in October 2007 with the unification of nine different foundations.

The Foundation does not pursue profit and devotes all its resources to educational purposes such as spreading knowledge, supporting and developing research in the most important scientific and humanistic fields, promoting the study of the greatest Italian and foreign historians and philosophers.

It aims to encourage high-achieving students in their university careers and to support the best graduates to reach their work and research objectives encouraging them to obtain excellent results.

The Foundation manages funds, as well as bequests and donations, in order to ensure for students awards and scholarships. It supports the collection of public and private funds for purposes of research and study, it promotes and enhances the archaeological heritage of Sapienza with exhibitions, conferences and visits and it coordinates and promotes the activities of NoiSapienza Associazione Alumni and In Unam Sapientiam.

Prize-giving Ceremony

CATERINA TOMASSONI
FELICE PIETRO CHISESI
PHYSICS PRIZE

Thursday, September 13, 2018
3.00 pm

Aula E. Amaldi - G. Marconi Building
Department of Physics

Sapienza University of Rome
Piazzale Aldo Moro 5

In collaboration with

Dipartimento di Fisica
Programme

Welcome addresses

Antonello Folco Biagini
President Sapienza Rome Foundation

Eugenio Gaudio
Rector Sapienza University of Rome

Introduction

Giorgio Parisi
President Accademia Nazionale dei Lincei

Paolo Mataloni
Director Department of Physics

Winner over 40 category

Prof. Philip KIM
Harvard University, USA

For his pioneering experiments on quantum transport in carbon nanotubes and graphene which opened new perspectives in the study of physical properties of materials at the nanoscale. Philip Kim is a world leading scientist in the research on nanoscale materials, 2D single layers, van der Walls heterostructures and low dimensional architectures and provided the groundbreaking observation of the quantum Hall effect in single layer graphene, contemporary to the results obtained by the 2010 Nobel prize winners A. Geim and K. Novoselov.

Winner under 40 category

Prof. Scott AARONSON
University of Texas – Austin- USA

For his strong contribution to define the fundamental limits of quantum computation with a number of pioneering works at the frontier of computational complexity and quantum mechanics.

Lectio of Prof. Philip KIM

Stacking atomic layers: quest for new material platform for emerging physics

Modern electronics has been heavily relied on the technology to confine electrons in the interface layers of semiconductors. In recent years, scientists discovered that various atomically thin materials including graphene, a single atomic carbon layer, can be isolated. In these atomically thin materials, quantum physics allows electrons to move only in an effective 2-dimensional (2D) space. By stacking these 2D quantum materials, one can also create atomic-scale heterostructures with a wide variety of electronic and optical properties. I will discuss the creation of new heterostructures based on atomically thin materials and emerging new physics with technological implications therein.

Lectio of Prof. Scott AARONSON

Three Questions About Quantum Computing

I'll discuss some of my work in quantum computing over the past 18 years, organizing it in terms of three questions. First, how can we demonstrate, using near-future hardware, that quantum computers can get any genuine speedups at all over classical computers (ideally useful speedups)? Second, what sorts of problems would be hard even for quantum computers, and can we turn the intractability of those problems to our advantage? Third, are there physically reasonable models of computation even more powerful than quantum computing, or does quantum computing represent an ultimate limit?