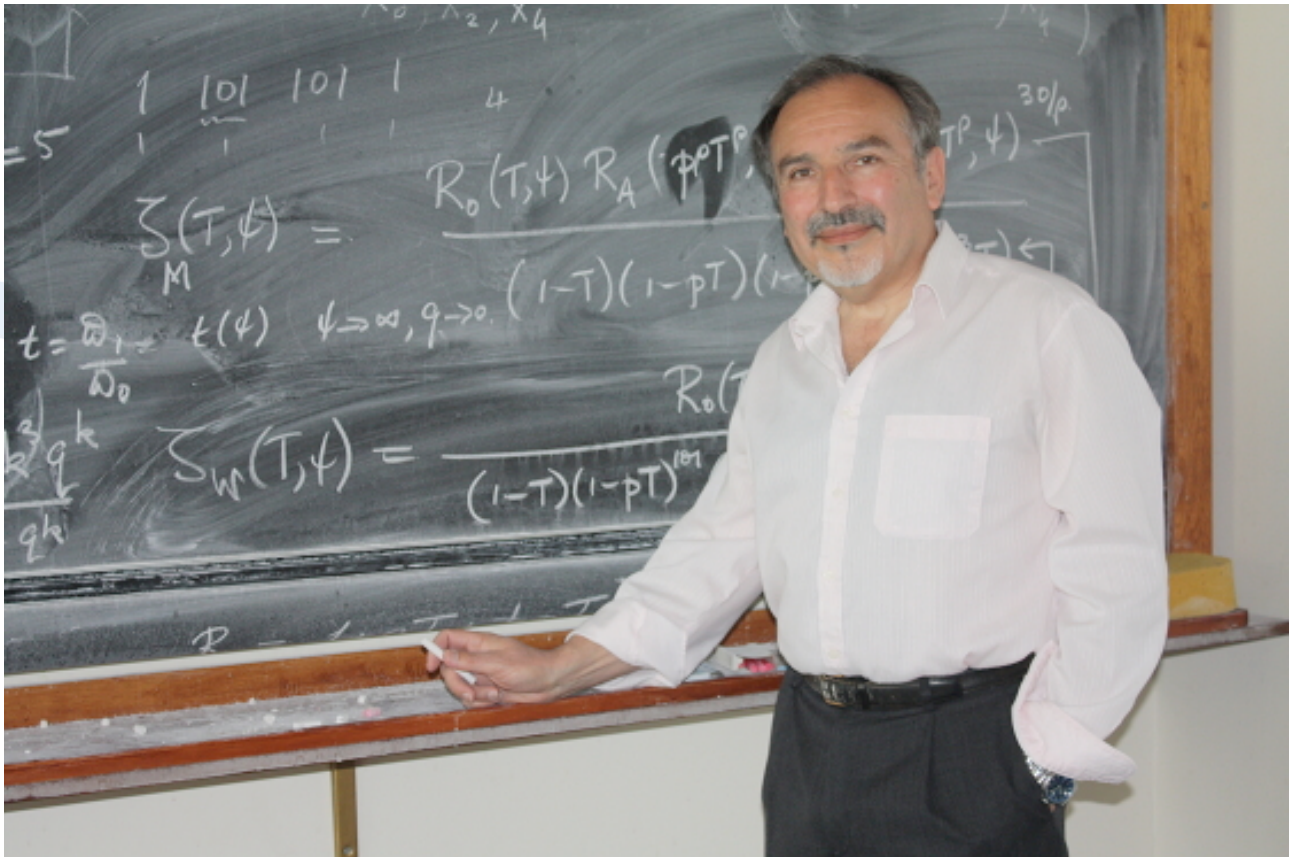




Sciama Lecture: appointment with strings



Philip Candelas invited to speak at the Dennis Sciama memorial event

June 4 2015, 5 pm

SISSA, Main Lecture Hall "P. Budinich"

Via Bonomea 265, Trieste

This year's appointment with the Sciama Memorial Lecture, the conference held each year at the International School for Advanced Studies (SISSA) of Trieste and at Oxford University in memory of the famous theoretical physicist Dennis Sciama, is devoted to String theory, the physical theory that aims to unify all the fundamental forces of nature. The special guest of the conference will be Philip Candelas, a mathematician and physicist from Oxford University, who will talk about how to narrow down the choice of the "vacuum states" of this theory, given that only very few of these states seem to be able to lead to a universe like ours.



Current quantum theories “explain the Universe” starting from the definition of a vacuum, that is, the state of the theory in the absence of any form of matter. In any theory that abides by the laws of quantum mechanics, vacuum is not absolute but can be thought of as “bubbly” in that it is populated by “virtual” particles that appear and disappear very quickly. String theory is no exception in this respect. The problem for this ambitious theory that attempts to unify gravity and quantum mechanics, is that the possible vacuum states (vacua) are a great many (as there are innumerable valleys in a jagged mountain range), and that it would be impossible for a universe like ours to develop out of the vast majority of them. How can we narrow down this extremely broad range of possibilities? This is the question that Philip Candelas, a mathematician and physicist at Oxford University, will be discussing at the next Sciamia Memorial Lecture, to be held at 5 pm on June 4th in the “P. Budinich” Main Lecture Hall of SISSA in Trieste. The conference is open to the public and will be held in English.

More in detail...

Philip Candelas is a physicist and mathematician of the University of Oxford (where he is head of the Mathematical Physics Group) and was a student of Dennis Sciama's. In addition to the University of Oxford he has also taught at the University of Texas at Austin and has been visiting professor at CERN and at Princeton University in the United States. Through his work, Candelas has given major contributions to string theory, to the concept of symmetry in physics, to quantum field theory and to many other research areas.

The Sciamia Memorial Lectures are dedicated to Dennis Sciama (1926-1999), who played a crucial role in the development of modern cosmology and relativistic astrophysics both through his own work and for his role mentoring a large number of students and colleagues who then went on to become key figures in research. Sciama was also head of the astrophysics sector at SISSA from 1982 to 1998. Before coming to Trieste he had headed other similar groups, first at Cambridge and then at Oxford in the UK.

The Memorial Lectures are a series of public conferences that are open to all and held by internationally renowned scientists. Every year the conference is repeated twice, once in Trieste and once in Oxford. The first ten lectures were held by Roger Penrose, George Ellis, Stephen Hawking, John Barrow, Julian Barbour, Marek Abramowicz, Kip Thorne, Martin Rees, Tim Palmer and James Binney.

IMAGES:

- **Credits: Philip Candelas**

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