



The edges of the universe: black holes, horizons and strings

Public lecture given by
Professor Andrew Strominger, Harvard University

The Royal Society,

6 – 9 Carlton House Terrace, London SW1Y 5AG

Wednesday 9 May, 6.30pm – 7.30pm

This event is in association with the Isaac Newton Institute for Mathematical Sciences. The exhibition *Intersections: Henry Moore and Stringed Surfaces*, will be open to the public to view after the lecture.

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Synopsis

The visible universe has edges, known as event horizons, which surround a black hole or a region of space speeding away faster than light. Event horizons are governed by a strikingly simple set of quantum laws which imply that black holes are at once the simplest and most complex objects in the physical universe. As discovered four decades ago by Bekenstein and Hawking this dichotomy underlies a deep paradox, the resolution of which has become a focal point of modern physics. Unexpectedly, insight into this paradox has recently been gained from string theory. This lecture will give an elementary account of these developments.

Speaker

Professor Andrew Strominger is a renowned theoretical physicist with seminal and pathbreaking contributions to quantum gravity and string theory. He is a co-discoverer of the Calabi-Yau compactification of string theory, which provides a unified framework for quantum gravity, and the theory of elementary particles. With Cumrun Vafa, he provided the first constituent model for supersymmetric black holes in terms of D-branes and established the equality of the entropy formulas of Boltzmann and Hawking-Bekenstein. Both contributions are historic signposts in the quest to discover the fundamental laws of nature. He is presently Gwlll E. York Professor of Physics, Director of the Center for the Fundamental Laws of Nature and a Senior Fellow of the Society of Fellows at Harvard University.

Admission

Free – no ticket or advance booking required. Doors open at 6pm and seats will be allocated on a first-come-first-served basis.

This event will be broadcast live on the web at royalsociety.org/live and available to view on demand within 48 hours of delivery.

Find out more about this event at royalsociety.org/events/2012/string-theory



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Front image: *Stringed Relief* by Henry Moore, 1937. The Henry Moore Foundation: gift of the artist 1977. LH 182 Back image: Professor Andrew Strominger.