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Robbert Dijkgraaf, Director of the Institute for Advanced Study and Leon Levy Professor since 2012, is a mathematical physicist who has made significant contributions to string theory and the advancement of science education. He is President of the InterAcademy Partnership, a past President of the Royal Netherlands Academy of Arts and Sciences, and a distinguished public policy adviser and advocate for science and the arts. For his contributions to science, he has received the Spinoza Prize, the highest scientific award in the Netherlands, and has been named a Knight of the Order of the Netherlands Lion. He is a member of the American Academy of Arts and Sciences and the American Philosophical Society. He is also a trained artist, writer, and popular lecturer.



# quantum mathematics and the fate of space, time, and matter

robbert  
dijkgraaf

institute for advanced study

thursday  
5 october 2017  
7:00 pm  
cubberley  
auditorium

Many mathematical concepts trace their origins to everyday experience, from astronomy to mechanics. Remarkably, ideas from quantum theory turn out to carry tremendous mathematical power too, even though we have little intuition dealing with elementary particles. The bizarre quantum world not only represents a more fundamental description of nature, it also inspires a new realm of mathematics that might be called "quantum mathematics" that turns out to be a powerful tool to solve deep outstanding mathematical problems. Similarly, new mathematical ideas address some of the most fundamental questions in physics, such as the Big Bang, black holes, and the ultimate fate of space, time, and matter.



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