Speaker: Prof. Gerard ‘t Hooft  
(Utrecht University, Netherlands)

Avenue: Room 14-201  
Faculty of Science and Technology,  
Yagami Campus, Keio University

Time & Date: 15:00 – 16:00  
February 3rd Thursday 2005

In our attempts to reconcile Quantum Mechanics with Einstein's theory of the gravitational force, the need is felt to dig deeper into the foundations of Quantum mechanics. The quantum mechanical nature of the Laws of Physics as we experience them today, may well be attributed to Chaotic phenomena at the Planck scale, 10^-33 cm. These chaotic fluctuations can indeed be seen to allow for a "quantummechanical logic", except for one thing: it is difficult to understand why one particular chaotic state exists that appears to be completely stable: the vacuum state. Yet this would have been the most elegant way to understand the behaviour of black holes at the Planck scale, and moreover: nature seems to be giving us a clue: the gravitational force appears to be very finely tuned to be zero precisely at the vacuum state.