

Kavli IPMU focus week on Gravity and Lorentz violations

February 18-22, 2013

Gravity and Lorentz violations

- Einstein's theory of relativity is one of the most successful theories in modern physics, and it is based on Lorentz symmetry.
- Why do we want to break Lorentz symmetry, either spontaneously or explicitly?

Gravity and Lorentz violations

- Lorentz violation may help solve mysteries of the universe such as dark energy, dark matter and inflation. [Sibiryakov, Blas, Jacobson, Tsujikawa, Wang]
- It may lead to renormalizable theory of quantum gravity. [Melby-Thompson, Horava, Gomes, Sotiriou, Wang]
- It may lead to a new type of holography and thus a new arena for application of string theory. [Melby-Thompson, Horava, Gomes, Sotiriou]
- Lorentz symmetry in our universe may be emergent. If so, we need to understand how. [Pospelov, Afshordi, Pujolas, Visser, Mukohyama]
- Even if the nature respects Lorentz symmetry, one of the best ways to understand and experimentally test it is to break it and to see what happens then. [Liberati, Pospelov, Sibiryakov, Jacobson, Afshordi, Soda]

Focus week

- Relaxed style of workshop
- Meant for truly fruitful discussions and interactions to get to the bottom

Let's enjoy it!

Some logistics

- Wireless network available
- We will collect presentation files
- Bus from Mitsui garden hotel @ 9:00am
- Bus from here @ 6:00pm (Mon, Tue, Wed, Fri)
- On Thursday, bus leaves here @ 12:10pm for excursion and then goes directly to hotel
- Banquet in Tuesday evening near hotel
- Lunch available at on-campus cafeteria “IKOI” (the other cafeteria requires a pre-paid card)
- IPMU teatime on 3F @ 3:00pm Mon-Fri