ICTS Postdoc/Graduate Student Seminar Series

Title	:	Simplifying gravity by avoiding it: the tale of the double copy
Speaker	:	Siddharth G Prabhu, ICTS-TIFR, Bangalore
Date	:	Friday, October 25, 2019
Time	:	4:00 PM
Venue	:	Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract ; Our current understanding of observed physical phenomena is through theories based on a framework that incorporates quantum mechanics and special relativity. We have successfully tested this framework with observations involving all the non-gravitational interactions. In particular, gauge theories play a central role in the description of such interactions. Taming gravity, though, has turned out to be a particularly complex adventure. Even at the classical level, the theory of gravity, though well understood and tested, is highly non-linear and difficult to work with.

Recently, a correspondence has emerged between gravitational theories and (two copies of) gauge theories, dubbed the double copy. Given our extensive understanding of non-gravitational theories, the double copy simplifies gravitational calculations, and might even provide a new approach to understand gravitational theories. Furthermore, peculiar theories, such as that of the bi-adjoint scalar, also make an appearance, offering the potential to streamline both gauge and gravity theories.

Note: This will be an ongoing biweekly seminar series (Fridays, 4:00 pm) by the ICTS postdocs and graduate students