

Arjun Bagchi

Research Summary:

I have joined the HRI String Theory Group this academic year and am working under the supervision of Prof. Ashoke Sen. My specific area of research is Tachyon Condensation and String Field Theory. In the first half of the year I looked at the new analytical solutions to the Bosonic String Field Theory by Martin Schnabl and various other works related to it.

Presently, I am looking at the problem of formulating Superstring Field Theory on separated D-brane-anti D-brane pair. Tachyon Condensation in superstring field theories have been formulated on coincident brane-antibrane pairs and non-BPS D-branes in Type II theories. But in order to gain insight into actual formation of the tachyon and its condensation one needs to look at the separated case. The analysis now goes beyond the Universal sector and one needs to take into account fields like the one responsible for the shifting of the branes. We have looked to solve the problem in the Level Truncation scheme and are now looking at how one can put in time dependence into the game.

Conference/Workshops Attended:

1. *Advanced String Theory School*, Institute of Physics, Bhubaneswar, September 2006
2. *Workshop on String Theory*, HRI, December 2006.
3. *Indian Strings Meet*, Toshali Sands, Puri, December 2006.
4. *Theoretical High Energy Physics SERC School*, Hyderabad, January 2007.