PROCEEDINGS

of

the Workshop KOMABA 2000

on

"Non-perturbative Dynamics in String Theory"

November 14-16, 2000
University of Tokyo, Komaba

Edited by Y. Kazama

Preface

The workshop *Komaba 2000* on "Non-perturbative Dynamics in String Theory" was held from November 14 to 16 on the Komaba campus of the University of Tokyo. This was the second of the series at Komaba on string theory, made possible by the grant-in-aid for scientific research on priority area 707 endowed to the project "Supersymmetry and Unified Theory of Elementray Particles" (project leader: Tohru Eguchi, University of Tokyo) by the Japan Ministry of Education, Culture, Sports, Science and Technology. About 100 participants, including the four lecturers from abroad, gathered to discuss the outstanding problems in the recent developments on the non-perturbative aspects of string theory, mainly focusing on the intimately connected topics of the tachyon condensation, noncommutative solitons and (super)string field theory.

The organizational principle for this workshop was essentially the same as the one for the previous meeting, *Komaba 99*. There were two main aims: One is to provide a stimulating yet relaxed atomosphere in which the up-to-date critical issues in this fast-developing field can be discussed and examined with the active involvement of the audience. We have allocated ample time for the lectures so that rather extensive discussions among the audience and the speakers could be possible. The second aim was to provide a precious opportunity for the young students with serious interests in this area to get to know what the current outstanding issues are and how they are being attacked.

We believe that these two purposes were very much fulfilled, thanks largely to the tremendous effort of the lecturers, namely Nathan Berkovits, Jefferey Harvey, Washington Taylor and Barton Zwiebach, to prepare and present excellent lectures with full of originalities. To their achievements, including the preparation of the well-organized manuscripts for this proceedings, we would like to express our deepest gratitude.

Finally, it is our pleasure to thank all the participants for active involvements and hope that we will be able to hold a workshop of this sort in the near future again.

Organizing Committee: Akishi Kato, Mitsuhiro Kato,
Yoichi Kazama (chairman),
Yutaka Matsuo, Yuji Sugawara,
Tamiaki Yoneya

PROGRAM

Nov. 14 (Tue)

10:00-10:10 Opening: Yoichi Kazama (Tokyo)

10:10-11:40 Barton Zwiebach (MIT)
"String Field Theory and Tachyon Condensation I"

11:40-13:30 Lunch

13:30-15:00 Washington Taylor (MIT)
"Tachyon Condensation in Cubic Open Bosonic String Field Theory"

15:00-15:30 Break

15:30-17:00 Jeffery Havey (Chicago)
"Noncommutative Solitons and D-Branes I"

Nov. 15 (Wed)

10:00-11:30 Barton Zwiebach (MIT)
"String Field Theory and Tachyon Condensation II"

11:30-13:30 Lunch

13:30-15:00 Nathan Berkovits (São Paulo)
"Introduction to Open Superstring Field Theory I"

15:00-15:30 Break

15:30-17:00 Jeffery Havey (Chicago)
"Noncommutative Solitons and D-Branes II"

Nov. 16 (Thu)

10:00-11:30 Nathan Berkovits (São Paulo)
"Introduction to Open Superstring Field Theory II"

11:30-13:30 Lunch

13:30-15:00 Jeffery Havey (Chicago)
"Noncommutative Solitons and D-Branes III"

15:00-15:10 Closing: Tamiaki Yoyena (Tokyo)

Lectures