

DOE Final Report “Strings 2014”

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DOE Grant Number: DE-SC0011919

The Strings 2014 meeting was held at Princeton University in June 2014, co-sponsored by Princeton University and the Institute for Advanced Study. Plenary lectures at Strings 2014 were held in Richardson Auditorium of Princeton University. This comfortable and spacious facility easily accommodated the 616 participants registered participants at Strings 2014. The rental fee for the auditorium was \$11,000. This grant provided \$5,500 from the Department of Energy to pay for one-half of the cost of the facility rental and videotaping. Speakers were supported with funds from the National Science Foundation Clay Mathematics Institute, the Institute for Advanced Study and Princeton University.

The organization of Strings 2014 consisted of an International Organizing Committee of 60 prominent scientists around the world, and a Local Advisory Committee consisting of an additional 15 distinguished scientists from neighboring institutions. Additionally, the Local Organizing Committee assisted them with about 15 members (mostly faculty at Princeton University and the Institute for Advanced Study). These groups (which are listed at the end of this narrative) offered important input concerning the selection of speakers and helped to ensure that the speakers were selected from the broadest possible pool.

The conference was held on June 23-7 at Princeton University and the Institute for Advanced Study. The 616 registered participants included 272 participants from the United States and 344 from 32 institutions outside of the U.S. We believe that we were successful at providing a stimulating and up-to-date overview of research in string theory and its relations to other areas of physics and mathematics, ranging from geometry to quantum field theory, condensed matter physics, and more.

There were a total of 45 plenary speakers and 27 speakers at parallel sessions. (Parallel sessions were held at the Institute for Advanced Study.) Overall the speakers did an excellent job of presenting their topics and some presented surprising and novel results. The talks at Strings 2014 were videotaped and are available on the conference website: http://physics.princeton.edustrings2014/Talk_titles.shtml.

One important facet of Strings 2014 and one of the reasons it was so well-attended was that it had a strong educational component. The week before the meeting, there was a summer school, Prospects in Theoretical Physics (PiTP), held at the Institute for Advanced Study on the subject of string theory. 260 graduate students attended both PiTP and Strings 2014. The group consisted of 25 females and 235 males; 208 graduate

students and 52 postdocs. 129 participants were from the United States, and 131 participants came from institutions in 25 countries outside of the U.S. The Institute for Advanced Study substantially subsidized the summer school for students. Over two dozen students had the chance to give short (six minute) talks at the “gong shows” that were held at PiTP and Strings 2014, and nearly 60 students and postdocs made poster presentations at Strings 2014.

Listed below are committee members and speakers for Strings 2014.

A. Local Organizing Committee of Strings 2014

Nima Arkani-Hamed, Institute for Advanced Study; Curt Callan, Princeton University; Robbert Dijkgraaf, Institute for Advanced Study; Simone Giombi, Princeton University; Peter Goddard, Institute for Advanced Study; Steve Gubser, Princeton University; Igor Klebanov, Princeton University; Juan Maldacena, Institute for Advanced Study; Chiara Nappi, Princeton University; Alexander Polyakov, Princeton University; Silviu Pufu, Princeton University; Paul Steinhardt, Princeton University; Nathan Seiberg, Institute for Advanced Study; Herman Verlinde, Princeton University; Edward Witten, Institute for Advanced Study; Matias Zaldarriaga, Institute for Advanced Study.

B. Local Advisory Committee of Strings 2014

Tom Banks, Rutgers University; Mirjam Cvetič, University of Pennsylvania; Vijay Balasubramanian, University of Pennsylvania; Duiliu Emanuel Diaconescu, Rutgers University; Ron Donagi, University of Pennsylvania; Dan Friedan, Rutgers University; Paul Langacker, University of Pennsylvania; Gregory Moore, Rutgers University; Burt Ovrut, University of Pennsylvania; Joel Shapiro, Rutgers University; David Shih, Rutgers University; Scott Thomas, Rutgers University; Alexander Zamolodchikov, Rutgers University.

C. International Advisory Committee Of Strings 2014

Ofer Aharony (Weizmann Inst., Israel); Ignatios Antoniadis (CERN, Switzerland); Constantine Bachas (ENS, Paris); Melanie Becker (Texas A&M, USA); Nathan Berkovits (IFT, Brasil); Massimo Bianchi (Univ. of Rome, Italy); Raphael Bousso (UC Berkeley, USA); Lars Brink (Goteburg, Sweden); Jan de Boer (University of Amsterdam); Freddy Cachazo (Perimeter Inst., Canada); Louise Dolan (UNC, USA); Tohru Eguchi (Rikkyo&Kyoto, Japan); Johanna Erdmenger (MPI Munich, Germany); Matthias Gaberdiel (ETH, Switzerland); Davide Gaiotto (Perimeter Inst., Canada); James Gates (Maryland); Michael Green (Cambridge, UK); David Gross (KITP, USA); Rajesh Gopakumar (HRI, India); Jeffrey Harvey (Chicago, USA); Marc Henneaux (Univ. of Brussels, Belgium); Luis Ibanez (Madrid, Spain); Clifford Johnson (USC, USA); Shamit Kachru (Stanford, USA);

Renata Kallosh (Stanford, USA); Anton Kapustin (Caltech, USA);
 Elias Kiritsis (Crete, Greece); Finn Larsen (Univ. of Michigan);
 Kimyeong Lee (KIAS, Korea); Jan Louis (Hamburg Univ., Germany);
 Dieter Luest (LMU, Germany); Samir Mathur (Ohio State University, USA);
 Joseph Minahan (Uppsala University, Sweden); Shiraz Minwalla (TIFR, India); Jeff
 Murugan (Cape Town); Robert Myers (Perimeter Institute, Canada);
 Nikita Nekrasov (SCGP, USA); Hiroshi Ooguri (Caltech, USA);
 Amanda Peet (Univ. of Toronto, Canada); Joseph Polchinski (KITP, USA);
 Fernando Quevedo (ICTP, Trieste); Eliezer Rabinovici (Hebrew University, Israel);
 Augusto Sagnotti (Pisa, Italy); John Schwarz (Caltech, USA); Ashoke Sen (Harish-
 Chandra Research Institute, India); Eva Silverstein (Stanford University, USA);
 Kostas Skenderis (Southampton, UK); Andrew Strominger (Harvard, USA);
 Tadashi Takayanagi (Kyoto University, Japan); Arkady Tseytlin (Imperial College, UK);
 Cumrun Vafa (Harvard, USA); Mikhail Vasiliev (Lebedev Inst., Russia);
 Erik Verlinde (Univ. of Amsterdam, Netherlands); Spenta Wadia (Tata Institute, India);
 Piljin Yi (KIAS, South Korea); S.T. Yau (Harvard University, USA); Barton Zwiebach
 (MIT, USA).

D. Speakers at Strings 2014

Lara Anderson (Virginia Tech, Blacksburg); Benjamin Basso (Ecole Normale
 Supérieure, Paris); Daniel Baumann (Cambridge University); Piotr Bizon
 (Albert Einstein Institute, Potsdam); Jan de Boer (University of Amsterdam); Raphael
 Bousso (UC Berkeley); Freddy Cachazo (Perimeter Institute, Waterloo); Horacio Casini
 (Instituto Balseiro, Bariloche); Miranda Cheng (University of Amsterdam); Paul Chesler
 (Harvard University, Cambridge); Joseph Conlon (Oxford University); Clay Cordova
 (Harvard University, Cambridge); Sera Cremonini (Cambridge University, Texas A&M);
 Atish Dabholkar (LPTHE, Paris); Louise Dolan (University of North Carolina, Chapel
 Hill); Johanna Erdmenger (MPI, Munich); Mboyo Esole (Harvard University,
 Cambridge); Daniel Freedman (MIT, Cambridge, Stanford); Davide Gaiotto (Perimeter
 Institute, Waterloo); Jerome Gauntlett (Imperial College, London); Jaume Gomis
 (Perimeter Institute, Waterloo); Rajesh Gopakumar (Harish-Chandra Research Institute,
 Allahabad); Peter Graham (Stanford University); Michael Green (University of
 Cambridge); Nikolay Gromov (King's College, London); David Gross (KITP, UCSB);
 Monica Guica (University of Pennsylvania, Philadelphia); Masanori Hanada (Kyoto
 University, Stanford University); Simeon Hellerman (IPMU, Kashiwa); Veronika
 Hubeny (Durham University); Shamit Kachru (Stanford University); Denis Klevers
 (University of Pennsylvania, Philadelphia); Zohar Komargodski (Weizmann Institute of
 Science, Rehovot); John Kovac (Harvard University, Cambridge); David Kutasov
 (University of Chicago); Sangmin Lee (Seoul National University); Sungjay Lee
 (University of Chicago); Rob Leigh (University of Illinois, Champaign); Hong Liu (MIT,
 Cambridge); Carlos Mafra (University of Cambridge); Juan Maldacena (IAS, Princeton);
 Fernando Marchesano (IFT, Madrid); Marcos Marino (University of Geneva); Joseph
 Minahan (Uppsala University); Gregory Moore (Rutgers University, Piscataway); Jeff
 Murugan (University of Cape Town); Andrew Neitzke (University of Texas, Austin);
 Nikita Nekrasov (SCGP, Stony Brook); Kyriakos Papadodimas (CERN, Geneva); Joseph

Polchinski (KITP, UCSB); Mark van Raamsdonk (UBC, Vancouver); Suvrat Raju (ICTS, TIFR, Mumbai); Leonardo Rastelli (YITP, Stony Brook); Ashoke Sen (Harish-Chandra Research Institute, Allahabad); Eva Silverstein (Stanford University); David Simmons-Duffin (IAS, Princeton); Matthias Staudacher (Humboldt University, Berlin); Paul Steinhardt (Princeton University); Stephan Stieberger (MPI, Munich); Andrew Strominger (Harvard University, Cambridge); Raman Sundrum (University of Maryland, College Park); Yuji Tachikawa (U. Tokyo, IPMU, Kashiwa); Tadashi Takayanagi (YITP, Kyoto University); Alessandro Tomasiello (INFN, University of Milan Bicocca); Erik Tonni (SISSA, Trieste); Jaroslav Trnka (Caltech, Pasadena); Arkady Tseytlin (Imperial College, London); Cumrun Vafa (Harvard University, Cambridge); Mikhail Vasiliev (Lebedev Institute, Moscow); Nicholas Warner (USC, Los Angeles); Edward Witten (IAS, Princeton); Timo Weigand (Heidelberg University); Matias Zaldarriaga (IAS, Princeton).