EXPERIMENTAL AND THEORETICAL CHALLENGES TO PROBING DARK ENERGY

An International Workshop
December 1 - Public evening lecture
December 2-3 - Workshop
December 4 - Informal follow up meetings

Main Venue: Paul Brest Hall – Munger Residence
555 Salvatierra Walk, Stanford

Sponsored by
The France-Stanford Center
for Interdisciplinary Studies

Most sessions are free and open to the public. Round Table discussions are open to invited workshop participants only. Lunches and dinners are provided for invited workshop participants only.

http://francestanford.stanford.edu/conferences/darkenergy

WEDNESDAY, DECEMBER 1, 2010
7:30 pm – 9:00 pm Public Lecture
Cubberley Auditorium

Dark Energy and the Preposterous Universe
Sean Carroll

THURSDAY, DECEMBER 2, 2010
WHAT ARE THE CHALLENGES?
8:00 am – 8:30 am Registration and Breakfast

8:30 am – 8:45 am Welcome and goals of the workshop
Keith Baker, Gérard Bonneaud and Patricia Burchat

8:45 am – 10:15 am Status of Dark Energy: What do we know and how do we know it?
Chair: Gérard Bonneaud

• 8:45 am – 9:30 am Observation and measurement Chris Hirata
• 9:30 am – 10:15 am Theory Eva Silverstein

10:15 am – 10:45 am Break

10:45 am – 12:15 pm How can theory and experiment work together to disentangle this mystery?

Panel Discussion – Moderator: Roger Blandford
Panelists: Andreas Albrecht, Pierre Astier, Sarah Church, Henk Hoekstra, Patrick Petitjean

12:15 pm – 1:15 pm Lunch

Questions for Round Tables 1 to 4
• How does our understanding of astrophysics most limit our ability to extract precision cosmology using this probe?
• How does instrumentation most limit our ability to extract cosmology using this probe?
• How can the uncertainties be reduced through new efforts or collaborations?
• How can uncertainties be reduced with measurements from other probes?

1:15 pm – 2:15 pm Round Table discussions (a)
• RT 1a, Clusters
  Pierre Binetruy (moderator), Marusa Bradac (scribe)
• RT 2a, Supernovae
  Robert Cahn (moderator), Pierre Astier (scribe)
• RT 3a, Lensing
  Uros Seljak (moderator), Roger Blandford (scribe)
• RT 4a, BAO
  Andreas Albrecht (moderator), Steve Kahn (scribe)
2:15 pm – 3:15 pm Round Table discussions (b)
• RT 1b, Clusters
  Steve Allen (moderator), Henk Hoekstra (scribe)
• RT 2b, Supernovae
  Philippe Brax (moderator), Alex Kim (scribe)
• RT 3b, Lensing
  Chris Hirata (moderator), James Bartlett (scribe)
• RT 4b, BAO
  Patrick Petitjean (moderator), Risa Wechsler (scribe)

3:15 pm – 3:45 pm Break
(Scribes prepare summaries)

3:45 pm – 5:45 pm Reports of the scribes and discussions
Chair: Patricia Burchat
• Scribes RT 1(a&b), Marusac Bradac – Henk Hoekstra
  7'+7'+16' (30')
• Scribes RT 2(a&b), Pierre Astier – Alex Kim
  7'+7'+16' (30')
• Scribes RT 3(a&b), Roger Blandford – James Bartlett
  7'+7'+16' (30')
• Scribes RT 4(a&b), Steve Kahn – Risa Wechsler
  7'+7'+16' (30')

6:30 pm Dinner

FRIDAY DECEMBER 3, 2010

8:00 am – 8:30 am Breakfast

Questions for Round Table 5
• How does our understanding of astrophysics most limit our ability to extract precision cosmology using this probe?
• How does instrumentation most limit our ability to extract cosmology using this probe?
• How can the uncertainties be reduced through new efforts or collaborations?
• How can uncertainties be reduced with measurements from other probes?

8:30 am – 9:30 am Round Table discussions (a) & (b)
• RT 5a, CMB
  Daniel Holz (moderator), David Schlegel (scribe)
• RT 5b, CMB
  Sarah Church (moderator), Philip Marshall (scribe)
• RT 6a, Role of blind analyses in precision cosmology
  Aaron Roodman (moderator), Saul Perlmutter (scribe)
• RT 6b, Role of blind analyses in precision cosmology
  Reynald Pain (moderator), Patricia Burchat (scribe)

9:30 am – 10:00 am Break

10:00 am – 11:00 am Reports of the scribes and discussions
Chair: Robert Cahn
• Scribes RT 5(a&b), David Schlegel – Philip Marshall
  7'+7'+16' (30')
• Scribes RT 6(a&b), Saul Perlmutter – Patricia Burchat
  7'+7'+16' (30')

HOW TO TACKLE THE CHALLENGES?

11:00 am – 12:30 pm Near term issues – How do we tackle the challenges? What’s on the horizon?
Chair: Steve Allen
• 11:00 am – 11:45 am
  Observation and measurement David Schlegel (BigBOSS), Saul Perlmutter (WFIRST)
• 11:45 am – 12:30 pm
  Theory Philippe Brax

12:30 pm – 1:30 pm - Lunch

1:30 pm – 3:00 pm What range of w(z) would be interesting to exclude? Why?
Panel Discussion – Moderator: Gabriele Veneziano ;
Panelists: François Bouchet, Stan Brodsky, Renata Kallosh, Saul Perlmutter, Leonardo Senatore

3:00 pm – 3:30 pm Break

3:30 pm – 5:00 pm Long term vision - Beyond the horizon, what may lie ahead?
Chair: Reynald Pain
• 3:30 pm – 4:15 pm
  Observation and measurement Steve Kahn
• 4:15 pm – 5:00 pm
  Theory Andrei Linde

5:00 pm – 6:00 pm Summary of the workshop
Michael Turner

SATURDAY, DECEMBER 4, 2010

Venue: Fred Kavli Building - SLAC

9:00 am – 12:00 pm Informal meetings