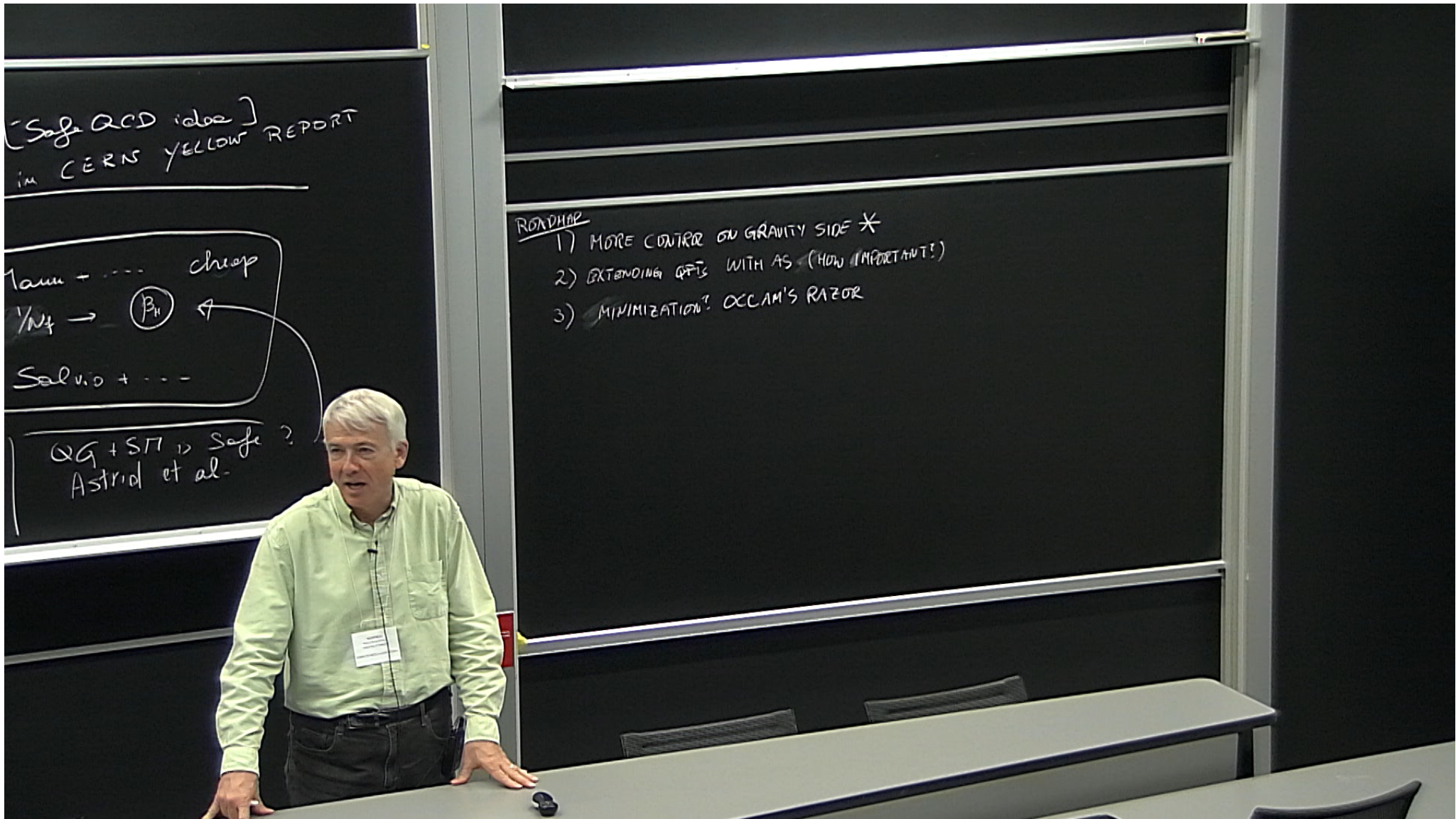


Title: Roadmap Discussion

Date: Jun 07, 2018 03:45 PM

URL: <http://pirsa.org/18060017>

Abstract:



REPORT

ROADMAP

- 1) MORE CONTROL ON GRAVITY SIDE *
- 2) EXTENDING QFTs WITH AS (HOW IMPORTANT?)
- 3) MINIMIZATION? OCCAM'S RAZOR
- 4) $1/N_F$ FIXED PTS $\Rightarrow$ MAKE SURE non-Ab OK
- 5) WHAT ARE BNDRY CNDs AT M_{Pl} ?
- 6) CHALLENGE of U(1) COUPLINGS $\rightarrow$ KEY ISSUE

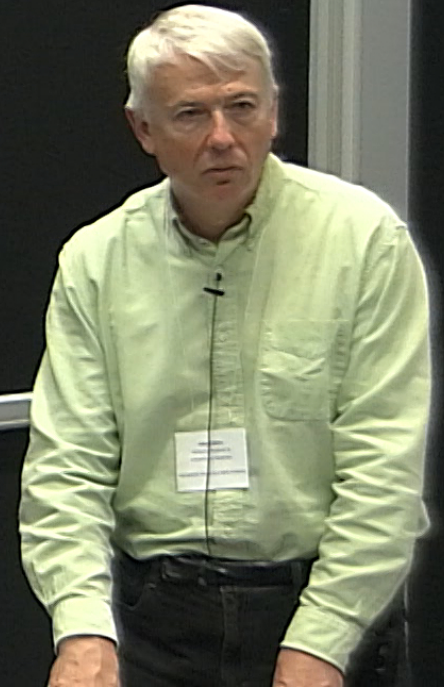
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 $\hookrightarrow$ HOW TO EMBED? BEST WAY?
- 7)

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5) WHAT ARE BNDRY CNDs AT M_{pl} ?

6) CHALLENGE of U(1) COUPLINGS $\rightarrow$ KEY ISSUE
 $\rightarrow$ HOW TO EMBED? BEST WAY?

7) HOW TO TEST AS? WITH GRAVITY?
WITHOUT GRAVITY?

$\rightarrow$ SEEK MODEL-INDEP TESTS

8) CONNECTION of AS (w) TRIVIALITY PROBLEM, CONFORMALITY PROBLEM,
+ HIERARCHY PROBLEM

ROADMAP

- 1) MORE CONTROL ON GRAVITY SIDE *
- 2) EXTENDING QFTs WITH AS (HOW IMPORTANT?)
- 3) MINIMIZATION? OCCAM'S RAZOR → PRECISE MATTER CONTENT?
- 4) $1/N_F$ FIXED PTS ⇒ MAKE SURE non-Ab OK
→ WHAT KIND OF CFT? NEW CRITICAL PHASE
- 5) WHAT ARE BNDRY CNDS AT M_{Pl} ?
- 6) CHALLENGE of U(1) COUPLINGS → KEY ISSUE
↳ HOW TO EMBED? BEST WAY?
- 7) HOW TO TEST AS? WITH GRAVITY?
WITHOUT GRAVITY?
→ SEEK MODEL-INDEP TESTS
- 8) CONNECTION of AS (w) TRIVIALITY PROBLEM, CONFORMALITY PROBLEM,
+ HIERARCHY PROBLEM

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- (1) PS
- 9) BH METRICS THAT are RG IMPROVED
 - 10) STRING THY $\leftarrow$ AS FIELD THY INCORPORATED?
 - 11) WHAT PHENOMENOLOGY IS POSSIBLE WITHOUT V_{NF} ?
 - 12) CAN ONE ACTUALLY SENSIBLY SPLIT GRAVITY + MATTER?
 - 13) HIGGS $\rightarrow$ IN A SPECIAL MASS RANGE (IN STD MODEL & AS EXTs)
 - 14) WHAT of AS DARK MATTER PHENOMENOLOGY?

(1) PS

- 9) BH METRICS THAT are RG IMPROVED
- 10) STRING THY $\leftarrow$ AS FIELD THY INCORPORATED?
- 11) WHAT PHENOMENOLOGY IS POSSIBLE WITHOUT $1/N_F$?
- 12) CAN ONE ACTUALLY SENSIBLY SPLIT GRAVITY + MATTER?
- 13) HIGGS $\rightarrow$ IN A SPECIAL MASS RANGE (IN STD MODEL & AS EXTs)
- 14) WHAT of AS DARK MATTER PHENOMENOLOGY?
- 15) TECNICAL ASPECT: STRONG COUPLING METHODS NEEDED
 - LATTICE
 - ADS/CFT IDEAS
 - FUNCTIONAL RG

ROADMAP

- 1) MORE CONTROL ON GRAVITY SIDE * (GHOST ISSUE) |||||
- 2) EXTENDING QFTs WITH AS (HOW IMPORTANT?)
- 3) MINIMIZATION? OCCAM'S RAZOR → PRECISE MATTER CONTENT?
- 4) $1/N_F$ FIXED PTS ⇒ MAKE SURE NON-Ab OK
→ WHAT KIND OF CFT? NEW CRITICAL PHASE
- 5) WHAT ARE BNDRY CNDs AT M_{Pl} ?
- 6) CHALLENGE of U(1) COUPLINGS → KEY ISSUE
↳ HOW TO EMBED? BEST WAY?
- 7) HOW TO TEST AS? WITH GRAVITY? WITHOUT GRAVITY? } SOME FREE COUPLINGS CAN BECOME PREDICTIONS
→ SEEK MODEL-INDEP TESTS
- 8) CONNECTION of AS @ TRIVIALITY PROBLEM, CONFORMALITY PROBLEM, + HIERARCHY PROBLEM