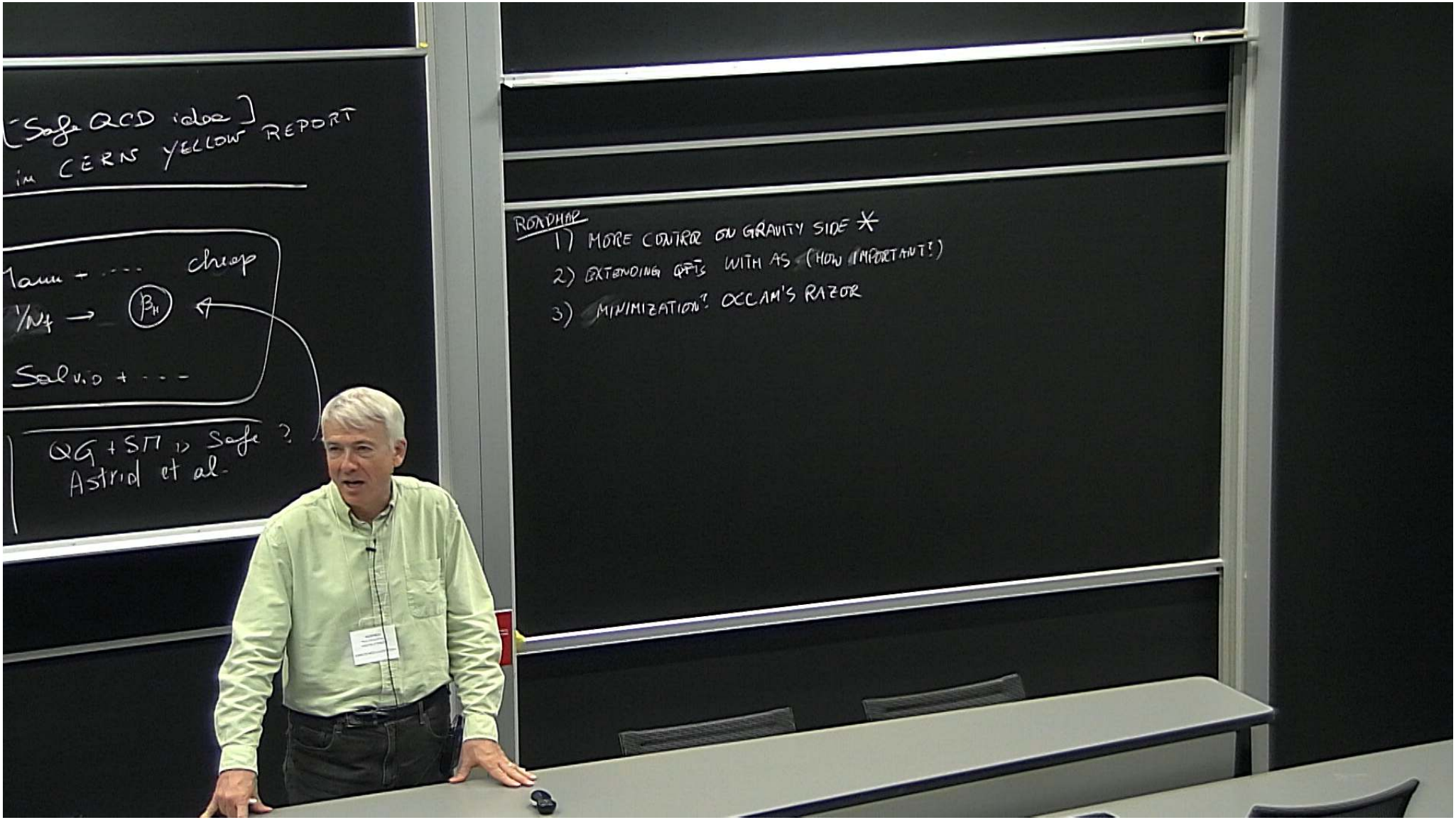
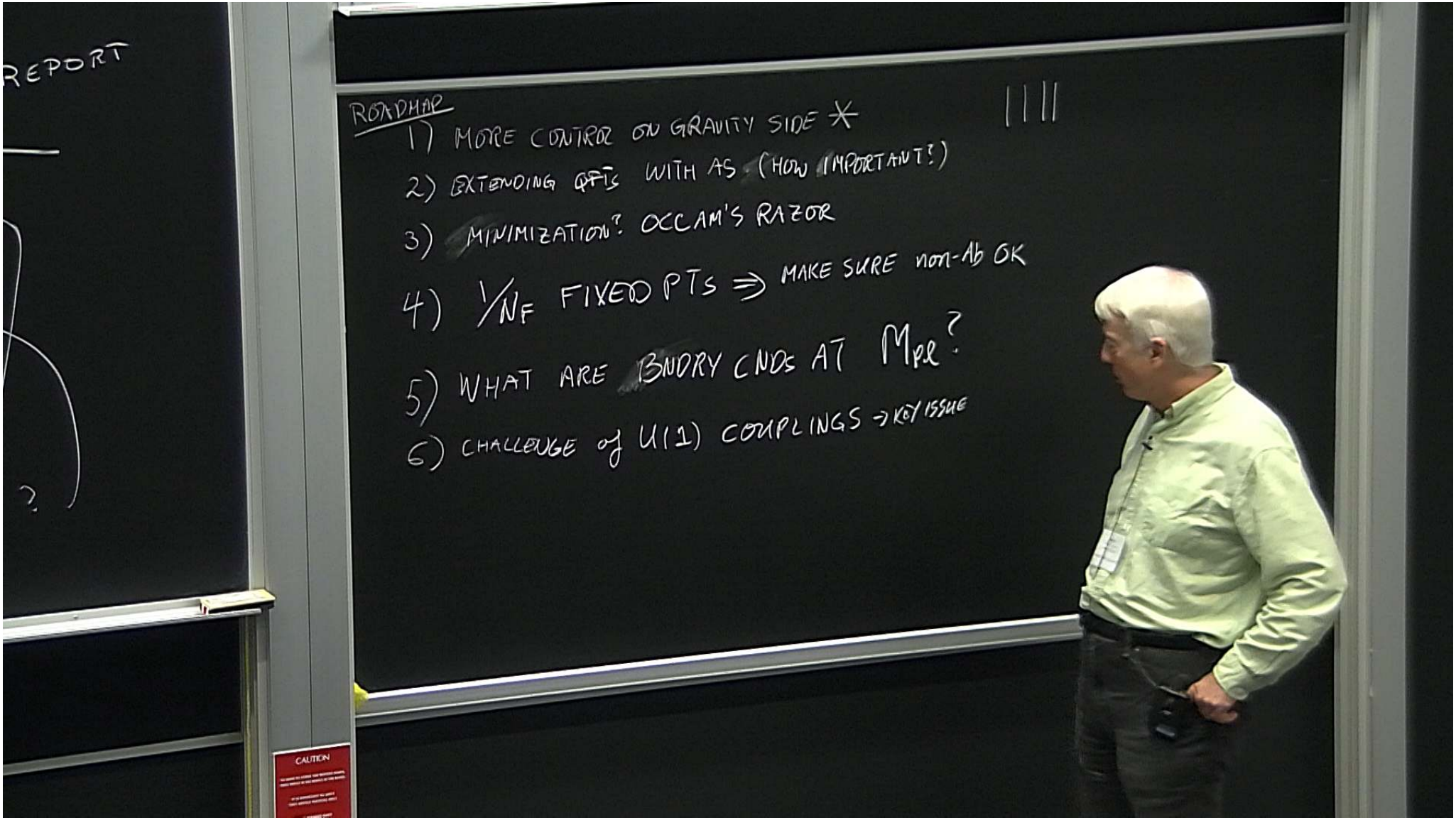
Title: Roadmap Discussion

Date: Jun 07, 2018 03:45 PM

URL: http://pirsa.org/18060017

Abstract:


[Safe QCD idea]
in CERN YELLOW REPORT
cheap
QG + SM ⇒ Safe ?
Astrid et al.
ROADMAP
1) MORE CONTROL ON GRAVITY SIDE *
2) EXTENDING QFTs WITH AS (HOW IMPORTANT?)
3) MINIMIZATION? OCCAM'S RAZOR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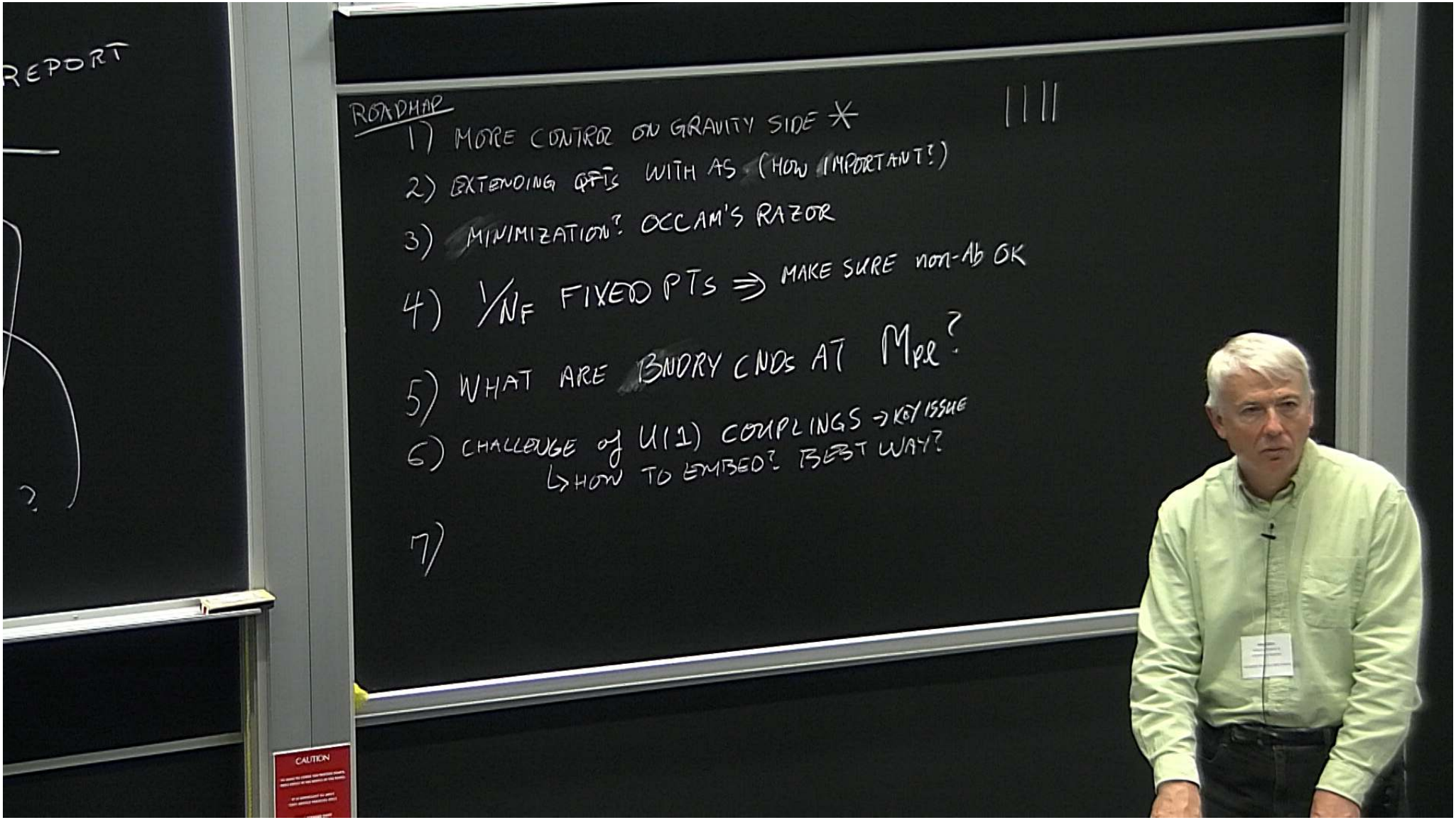
ROADMAP
1) MORE CONTROL ON GRAVITY SIDE *
2) EXTENDING QFTs WITH AS (HOW IMPORTANT?)
3) MINIMIZATION? OCCAM'S RAZOR
4) 1/N_F FIXED PTs ⇒ MAKE SURE non-Ab OK
5) WHAT ARE BNDRY CNDs AT M_Pl?
6) CHALLENGE of U(1) COUPLINGS → KEY ISSUE
CAUTION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↳ HOW TO EMBED? BEST WAY?
7)
CAUTION

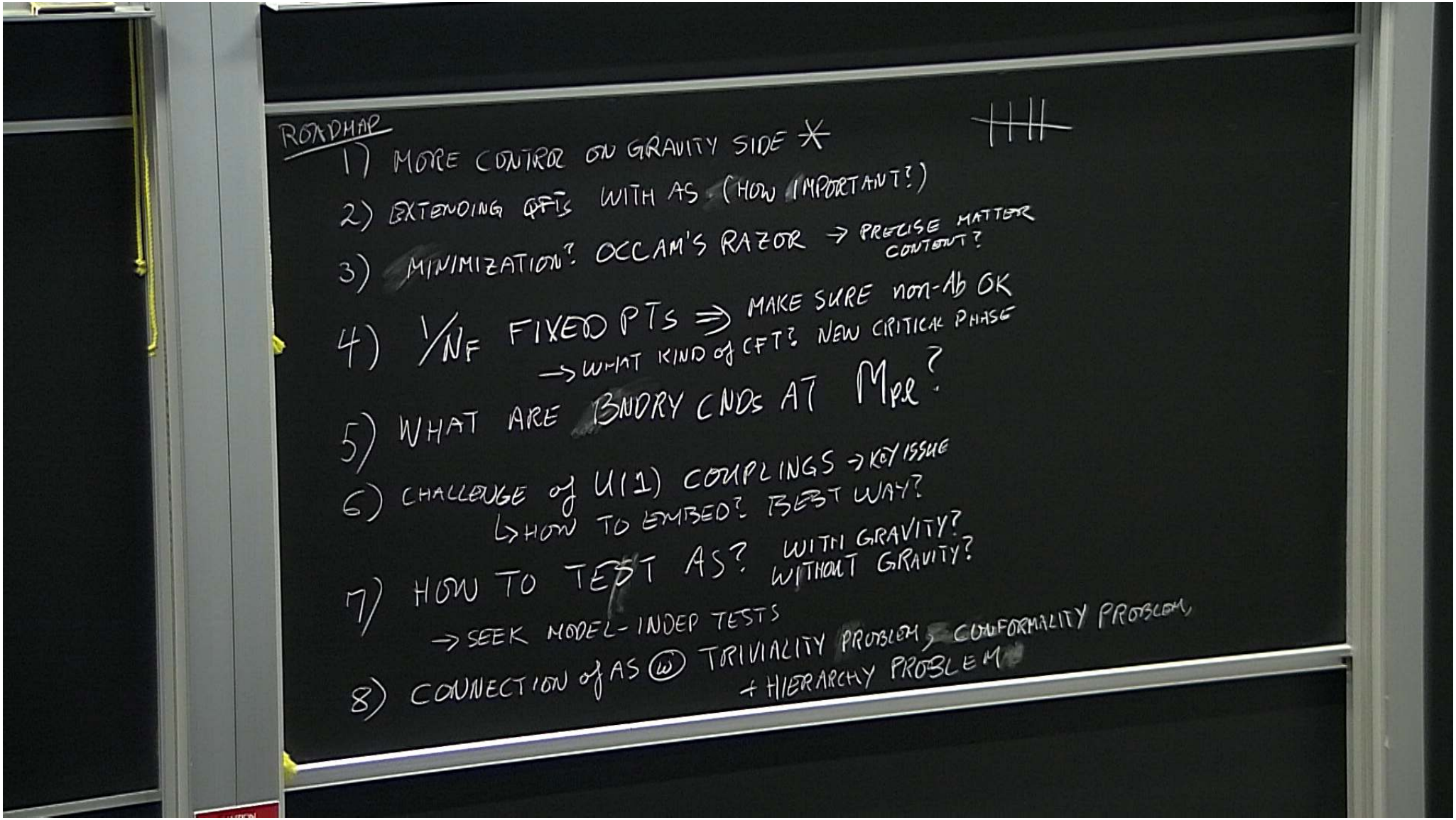
4) $1/N_F$ FIXED PTs $\Rightarrow$ MAKE SURE non-Ab OK

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

6) CHALLENGE of U(1) COUPLINGS → 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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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
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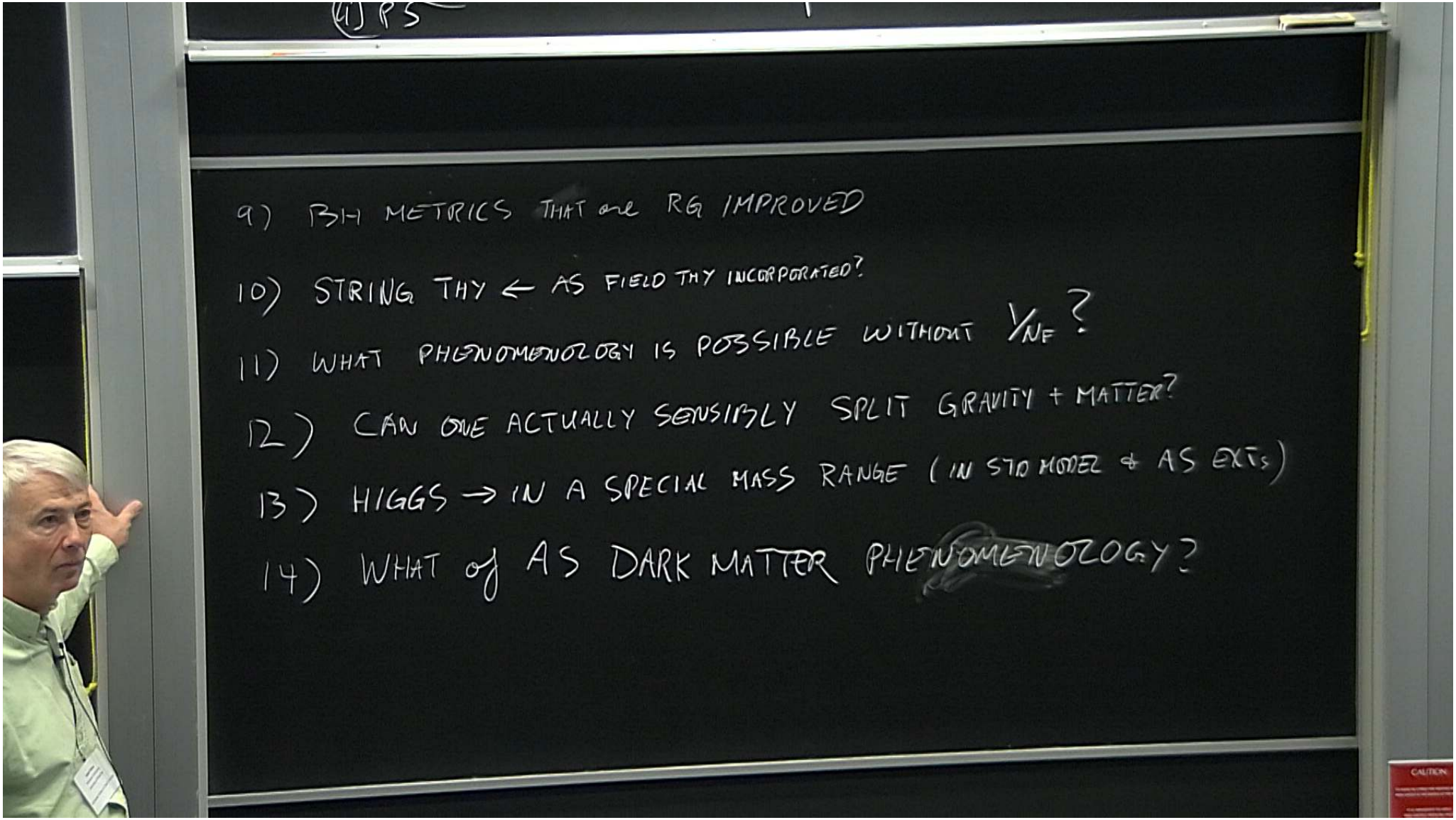
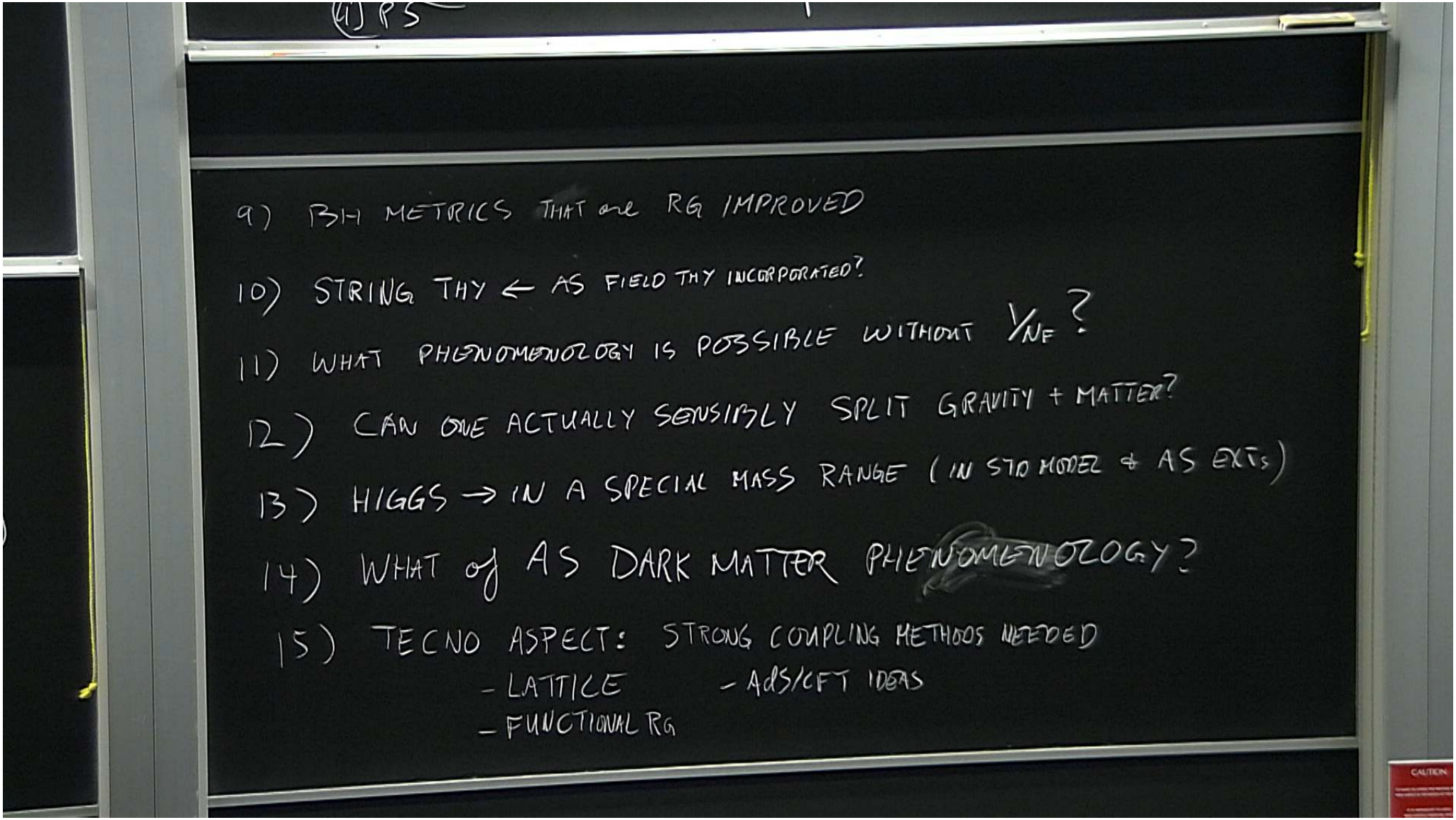

9) BH METRICS THAT are RG IMPROVED
10) STRING THY ← AS FIELD THY INCORPORATED?
11) WHAT PHENOMENOLOGY IS POSSIBLE WITHOUT 1/NF ?
12) CAN ONE ACTUALLY SENSIBLY SPLIT GRAVITY + MATTER?
13) HIGGS → IN A SPECIAL MASS RANGE (IN STD MODEL & AS EXTs)
14) WHAT of AS DARK MATTER PHENOMENOLOGY?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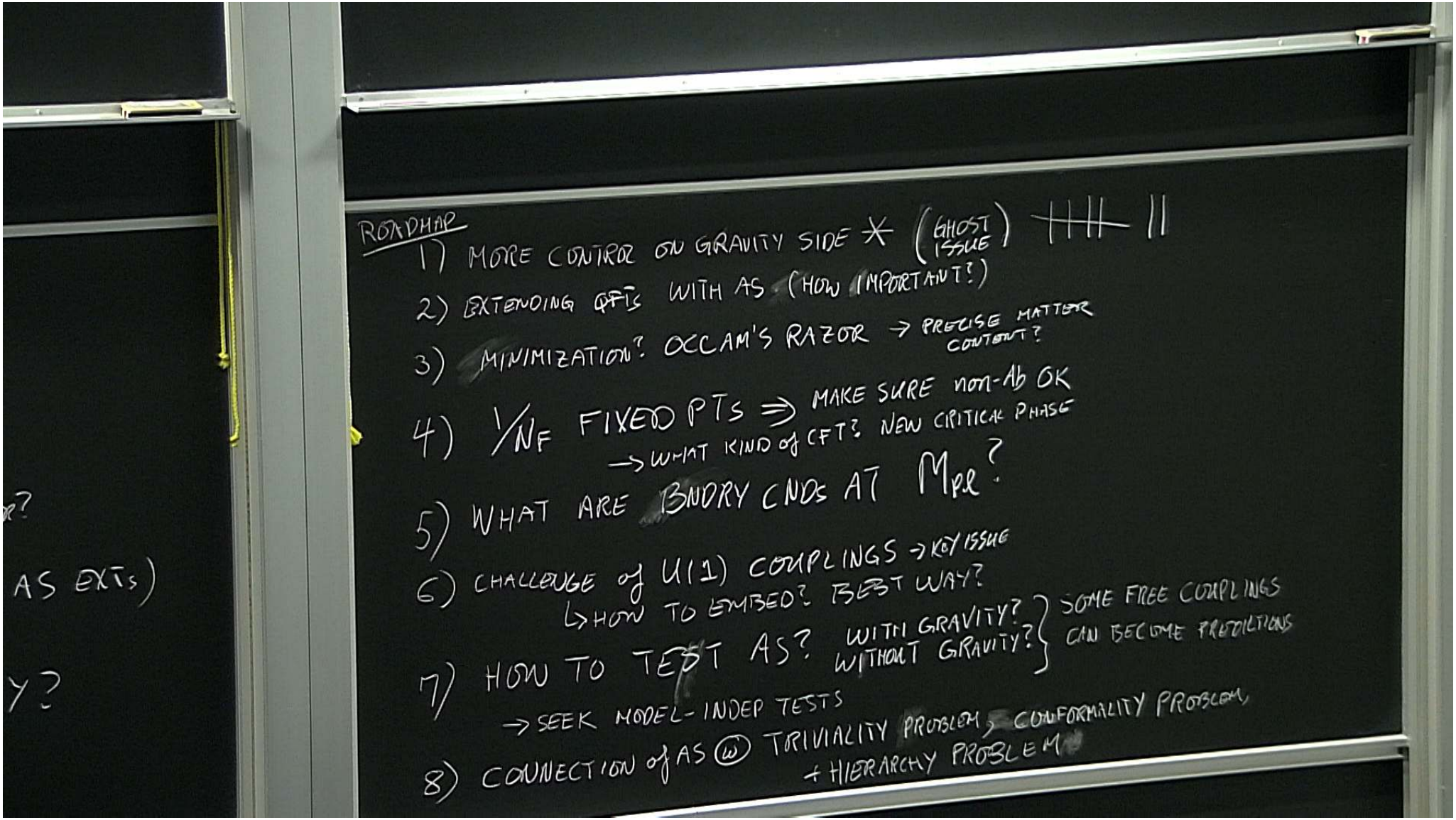
14) WHAT of AS DARK MATTER PHENOMENOLOGY?
15) TECNO ASPECT: STRONG COUPLING METHODS NEEDED
- LATTICE
- FUNCTIONAL RG
- AdS/CFT IDEAS


ROADMAP
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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
AS EXTs)
Y?