

SUSY
EXOTICS
AND
REACTION TO
CONFRONTING
HIGGS

Organizers:

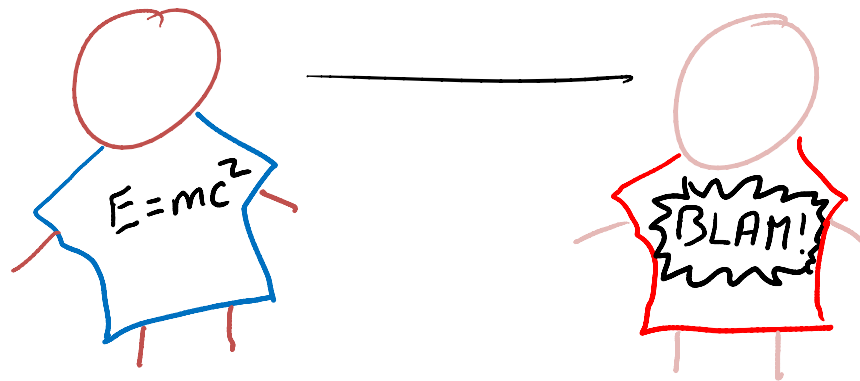
Patrick Meade, Michele Papucci, Raman Sundrum

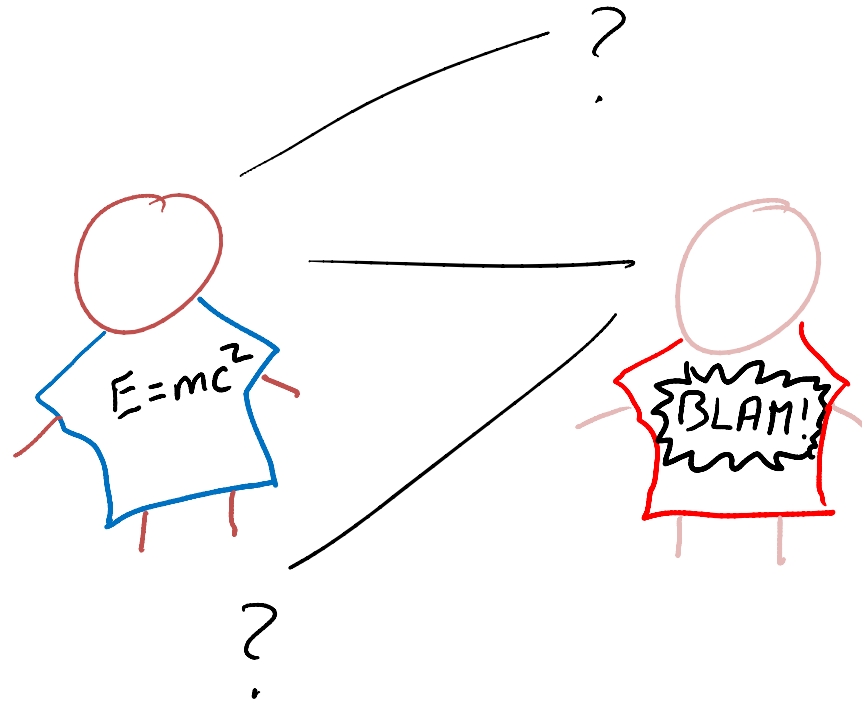
SUSY
EXOTICS
AND
REACTION TO
CONFRONTING
BEH Scalar :)

Organizers:

Patrick Meade, Michele Papucci, Raman Sundrum

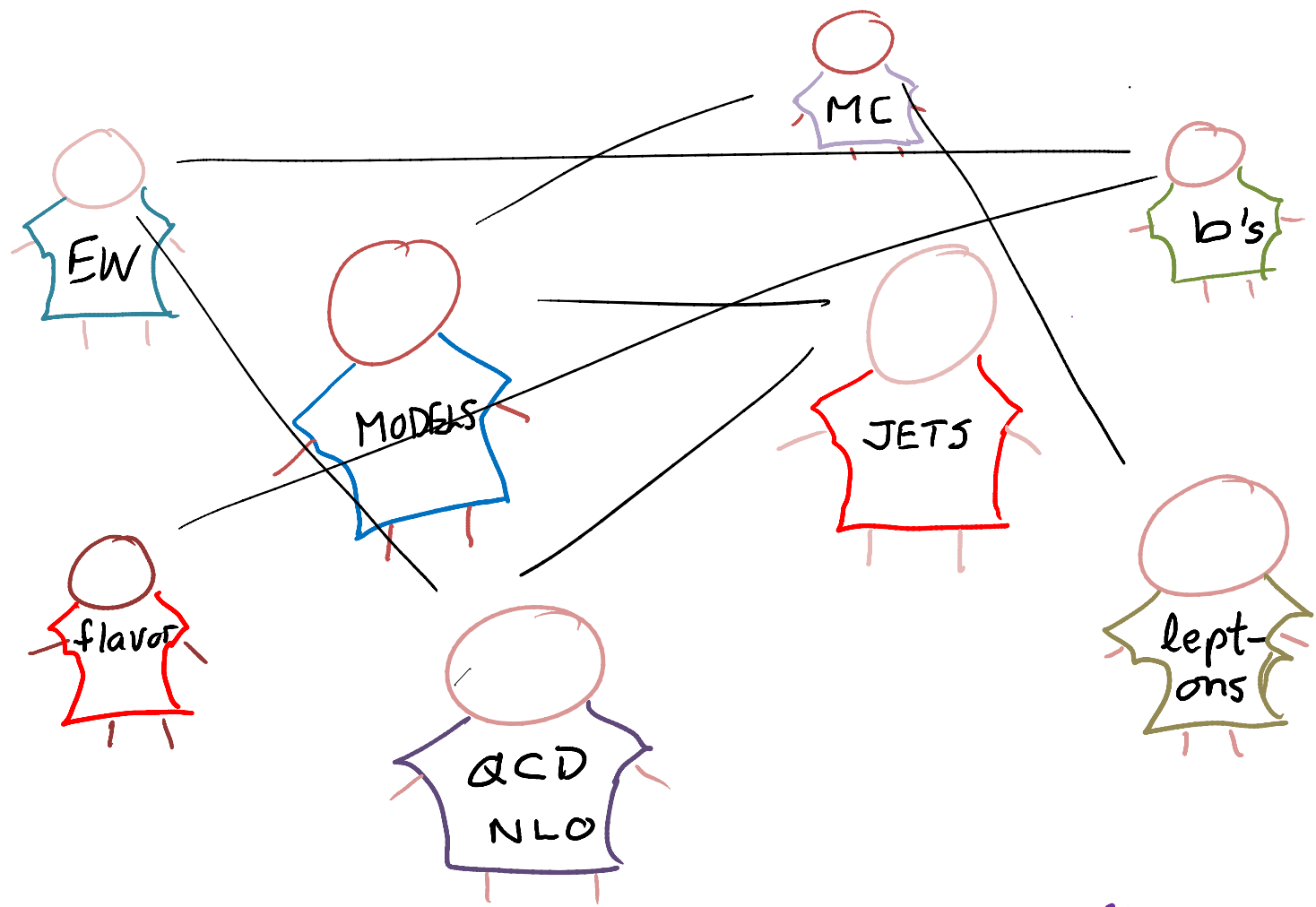
- ONE-ON-ONE DISCUSSIONS CAN
- BE EYE-OPENING
 - LEAD TO NEW IDEAS/SEARCHES/EMPHASES





ASSESSING & ACTING ON SUCH NEW IDEAS
OFTEN REQUIRES A BREADTH OF EXPERTISE
BEYOND SMALL-SCALE DISCUSSIONS

HERE, WE BRING TOGETHER A FULL RANGE OF EXPERTS,



A KIND OF "COLLECTIVE MIND" FOCUSED ON HOW BEST TO MAKE EARLY DISCOVERIES

RECIPE arising from discussions
with Sanjay Padhi (UCSD, CMS)

- HAND-PICKED CONCENTRATION OF THEORISTS
& EXPERIMENTALISTS COVERING ALL
MAJOR AREAS OF EXPERTISE



- LATEST LHC RESULTS & EXPERIENCE
- AMPLE TIME FOR DISCUSSION
- STIR AND WAIT...

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- LATEST LHC RESULTS & EXPERIENCE
 - AMPLE TIME FOR DISCUSSION
 - STIR AND WAIT...
- ... AN EXPERIMENT IN ITSELF

$\sim 5/f_b$ 7 TeV LHC represents a
CRITICAL JUNCTURE

- LHC HAS BEEN A SMASHING SUCCESS SO FAR,
THRUSTING US WELL INTO REGIME OF
EW UNIFICATION,
- CUTTING INTO LARGE PARTS OF PARAMETER
SPACE OF MAJOR MODELS
- \sim TeV SENSITIVITY TO NEW COLORED STATES
- SENSITIVE TO EW PRODUCTION
- $\sim 3\sigma$ SENSITIVITY TO SM HIGGS
ACROSS MASS RANGE, INTRIGUING RESULTS
IN LOW-MASS SEARCHES
- POISED TO EXPLORE HIGGS MECHANISM \leftrightarrow BSM

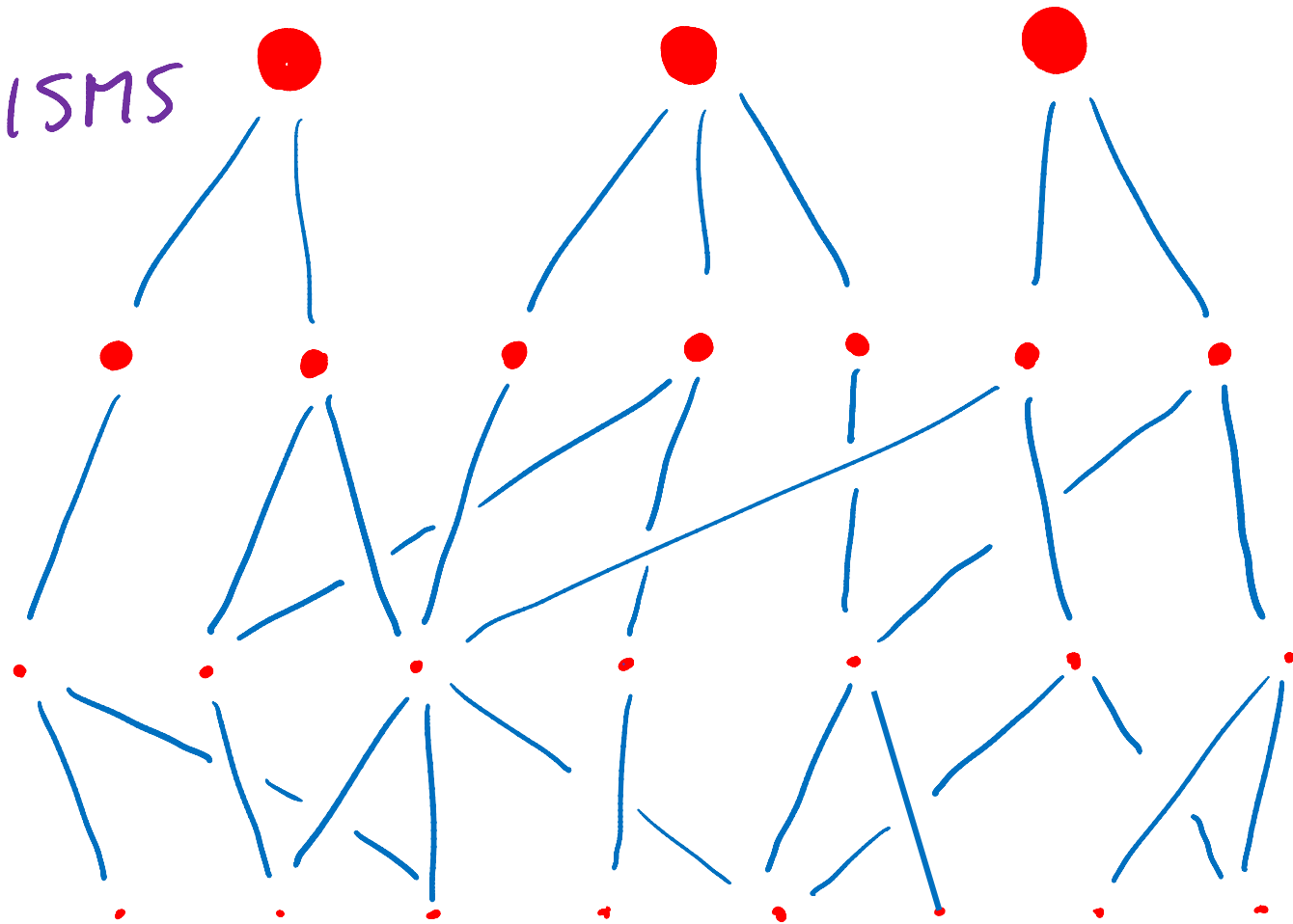
BSM THEORY ...

DEEP
MECHANISMS

SPECIFIC
MODELS

SIMPLIFIED
MODELS

SIGNAL
CHANNELS



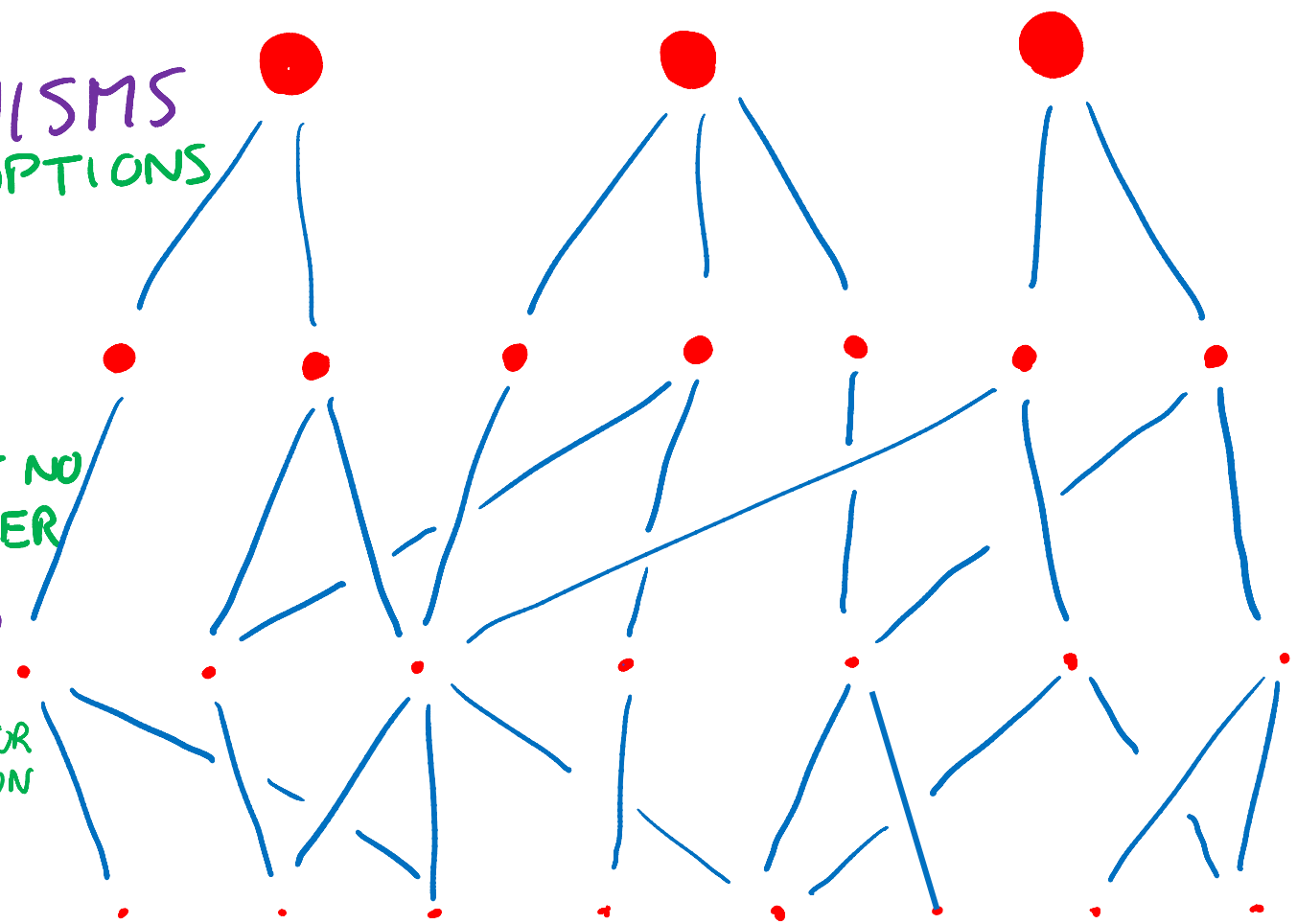
BSM THEORY ...

DEEP
MECHANISMS
ELEGANT OPTIONS

SPECIFIC
MODELS
"EXISTENCE
PROOFS", BUT NO
FRONT RUNNER

SIMPLIFIED
MODELS
USEFUL SUBSECTOR
PARAMETRIZATION

SIGNAL
CHANNELS



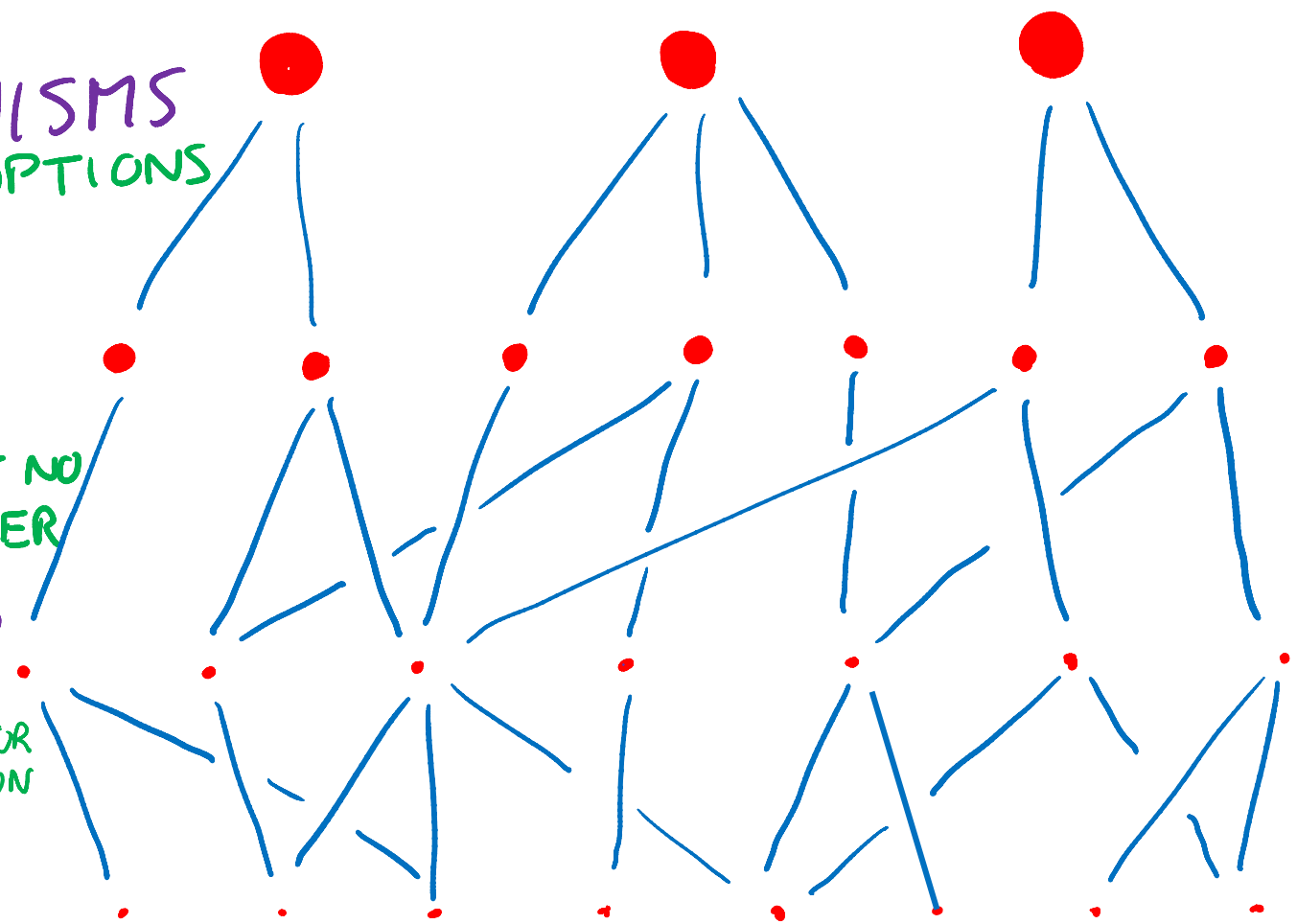
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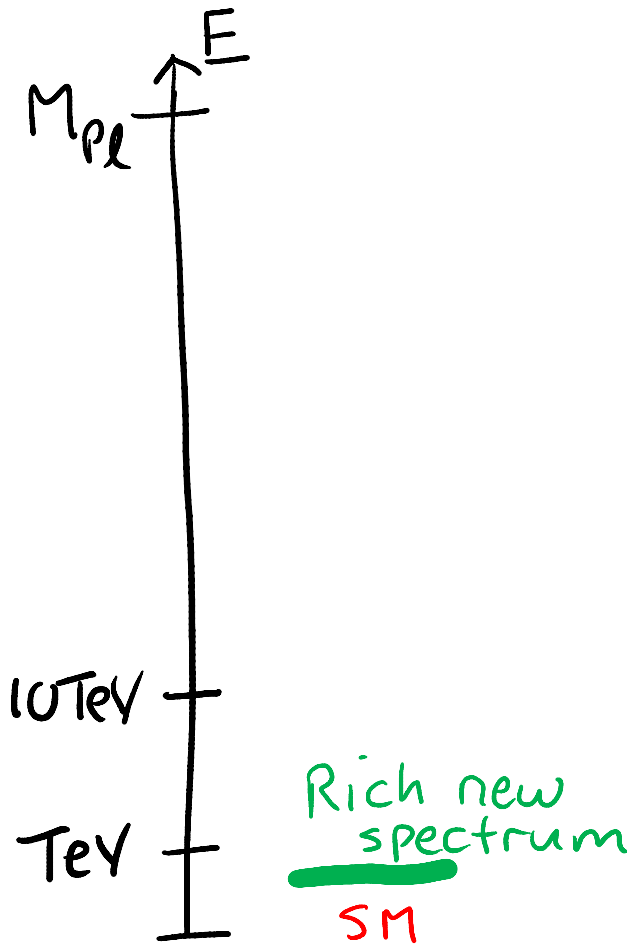
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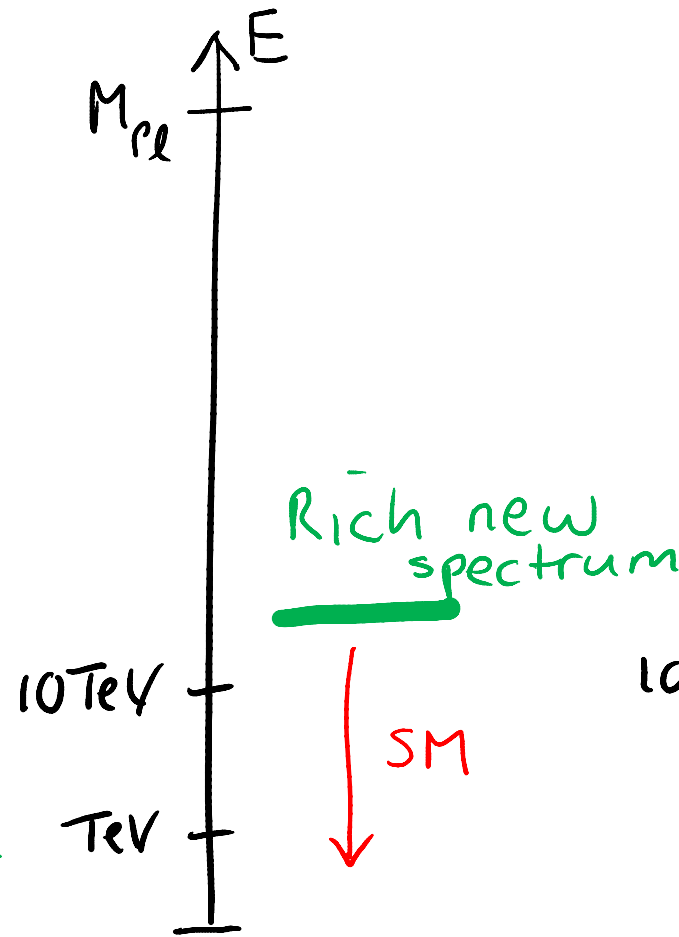


... IS V. HIGHLY DEVELOPED MENU FOR NATURE,
À PRIX FIXE OR À LA CARTE.

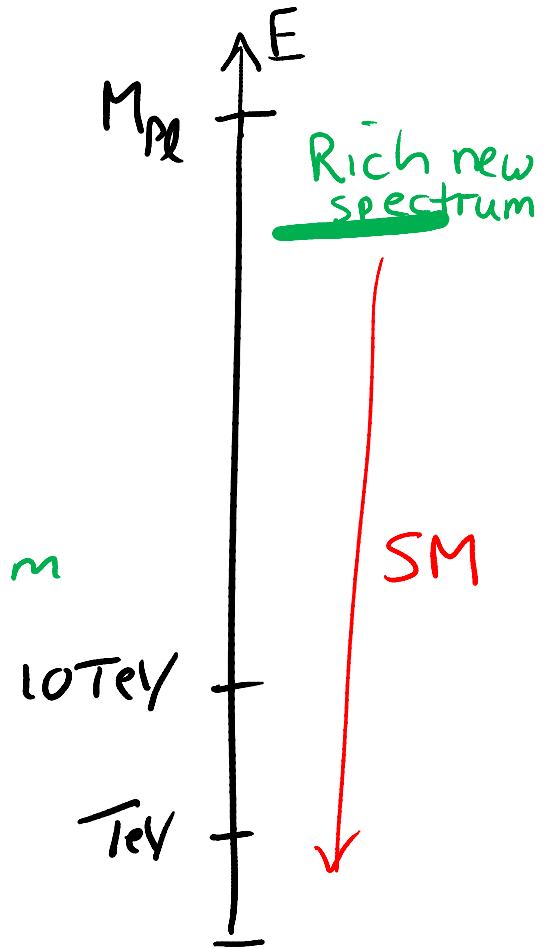
EW NATURALNESS ON TRIAL



Naturalness is perfect guide to new physics?

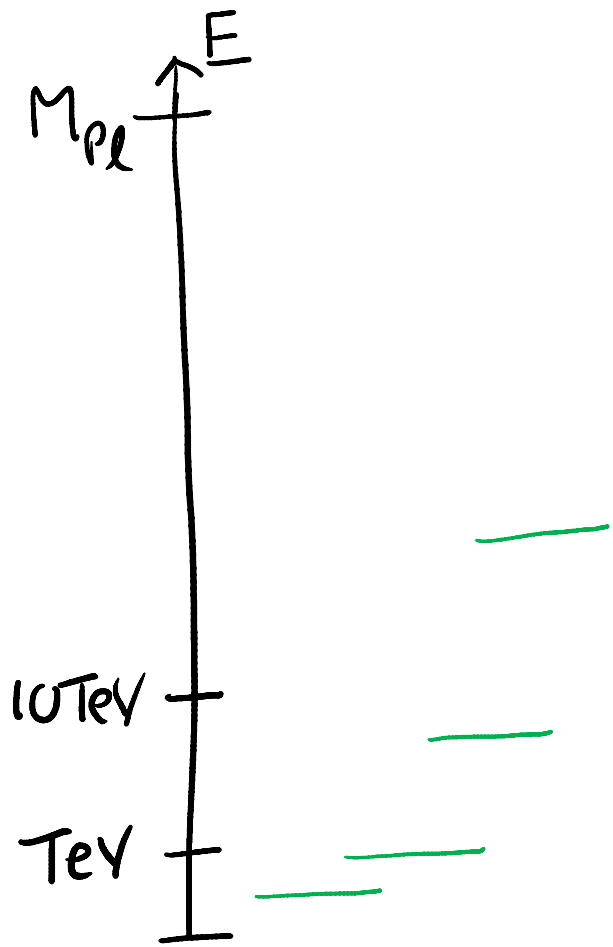


Naturalness is only a crude guide?

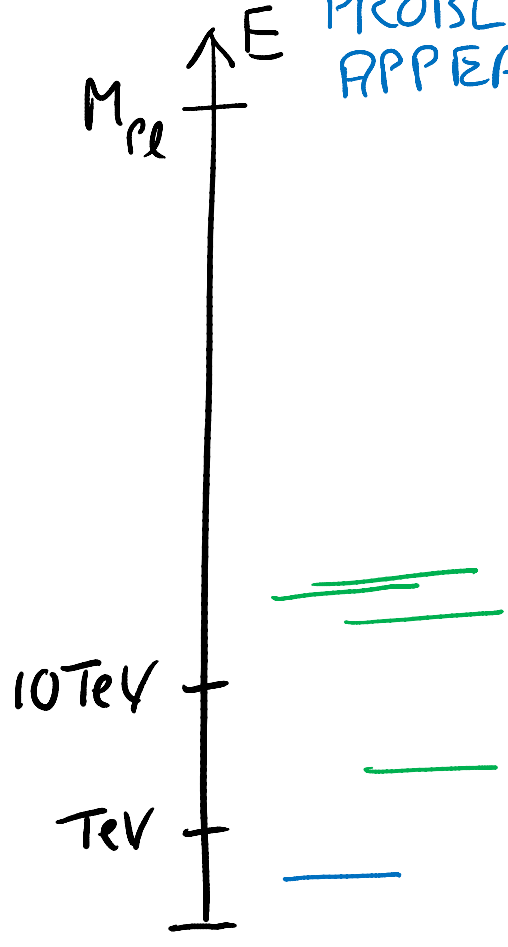


Naturalness is a flawed philosophy & guide

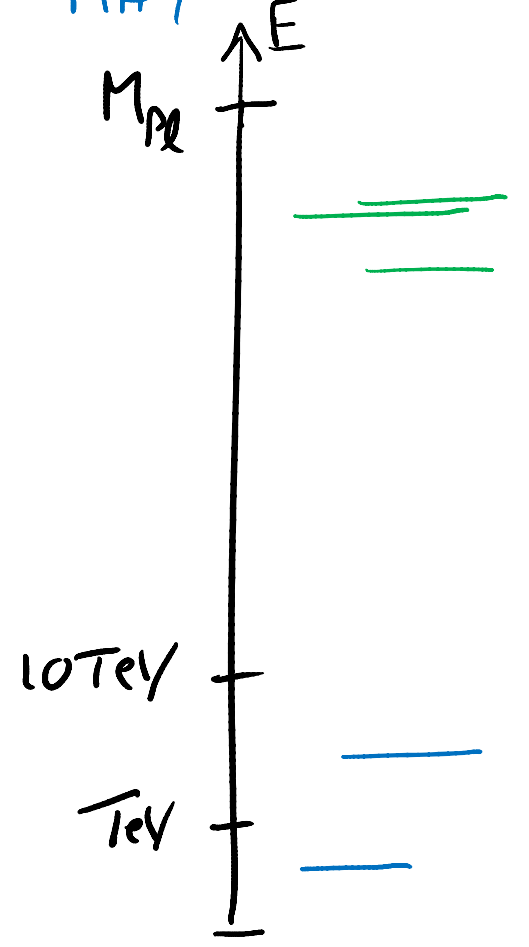
NEW STATES SOLVING HIERARCHY PROBLEM MAY BE SPREAD OUT. NEW STATES NOT RELATED TO HIERARCHY PROBLEM MAY APPEAR



Naturalness is perfect guide to new physics?



Naturalness is only a crude guide?



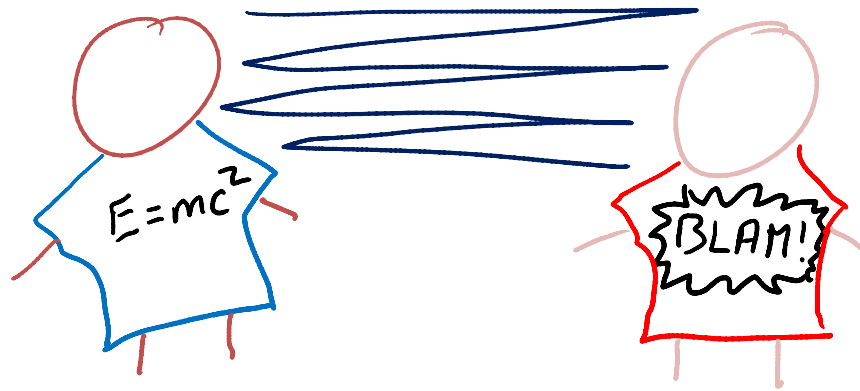
Naturalness is a flawed philosophy & guide

WIMP DARK MATTER
STILL WELL MOTIVATED

BROADER SET OF THEORETICAL
POSSIBILITIES THAN ORIGINAL
R-PARITY SUSY NEUTRALINOS

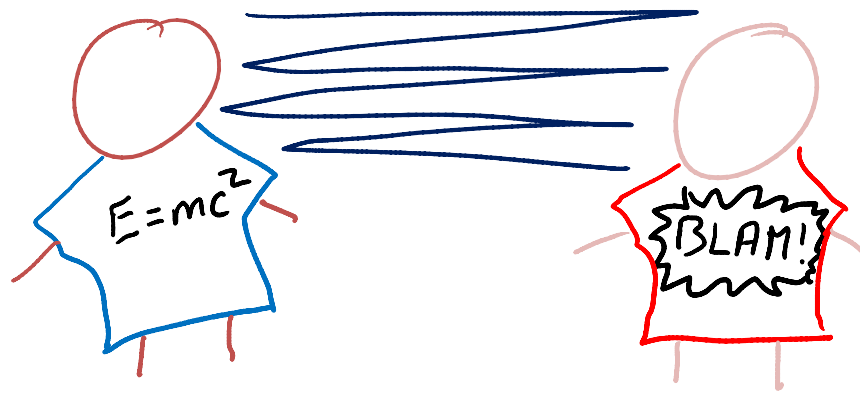
POSSIBLY RICH DARK SECTORS, WITH
SUBTLER INTERACTIONS TO "US"

EARLY DISCOVERIES WILL
REQUIRE MORE FLUID
THEORY-EXPERIMENT INTERACTIONS



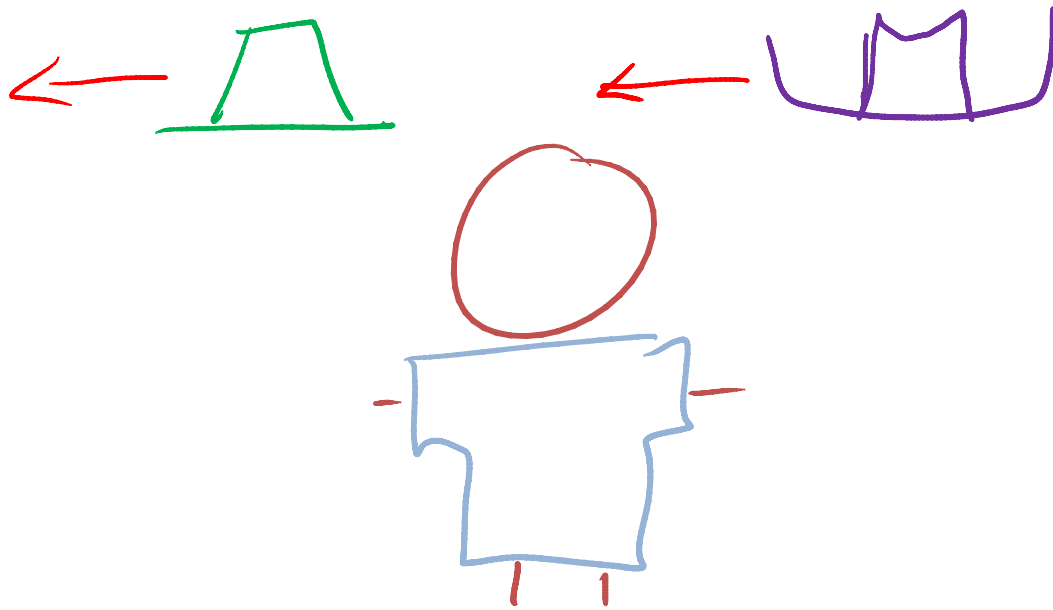
TO BETTER CRAFT & HONE OUR
SEARCH STRATEGIES
AND INVESTIGATE TENTATIVE SIGNALS
ACROSS MULTIPLE CHANNELS

EARLY DISCOVERIES WILL
REQUIRE MORE FLUID
THEORY-EXPERIMENT INTERACTIONS



TO BETTER CRAFT & HONE OUR
SEARCH STRATEGIES
AND INVESTIGATE TENTATIVE SIGNALS
ACROSS MULTIPLE CHANNELS
THIS IS THE GOAL OF "SEARCH"

CHANGING HATS...



FOR PRACTICAL HELP

please try people next door at
registration tables from our
Conference & Visitor Services unit,
anyone with UMD name tag,
or Nick Hammer

301-219-5483

or in person

NAME STANDS (TENTS)

in registration packet
to be put on table

so we can call on you
if you have question/comment
during discussions.

Can use it to "keep your seat"
for the day. But please be willing
to change seats from day to day.
(Take name stand home for night.)

POWER!!

Power strip = 4 plugs / 6 people
to charge laptops -

But can be bit of a stretch.

Please adapt, trade seats etc.

TALKS

= 30' including few
clarifying questions

EXTENDED DISCUSSION

follows 2-3 back to back
talks.

WIRELESS MICROPHONES / 6 people
to all questions/discussion from
audience

WHITEBOARD OUT FRONT

if discussions require a
Feynman diagram, cartoon or
other scribbling

PROJECTED ONTO 2nd SCREEN

PLOTS FROM AUDIENCE MEMBER'S
LAPTOP can also be projected onto
2nd screen.

END-OF-DAY DISCUSSIONS

to reflect more broadly
on connections between
searches, new opportunities etc.

FLUID DISCUSSION

following flow of
conversation \Rightarrow scheduled
timing not completely
precise, or perfectly "fair".

We will use our best
judgement if adjustments
seem warranted.

RECORDING (for web)

audio + slides of talks

audio + 2nd screen of discussion

long-distance video of
audience

DISCUSSION ROOM

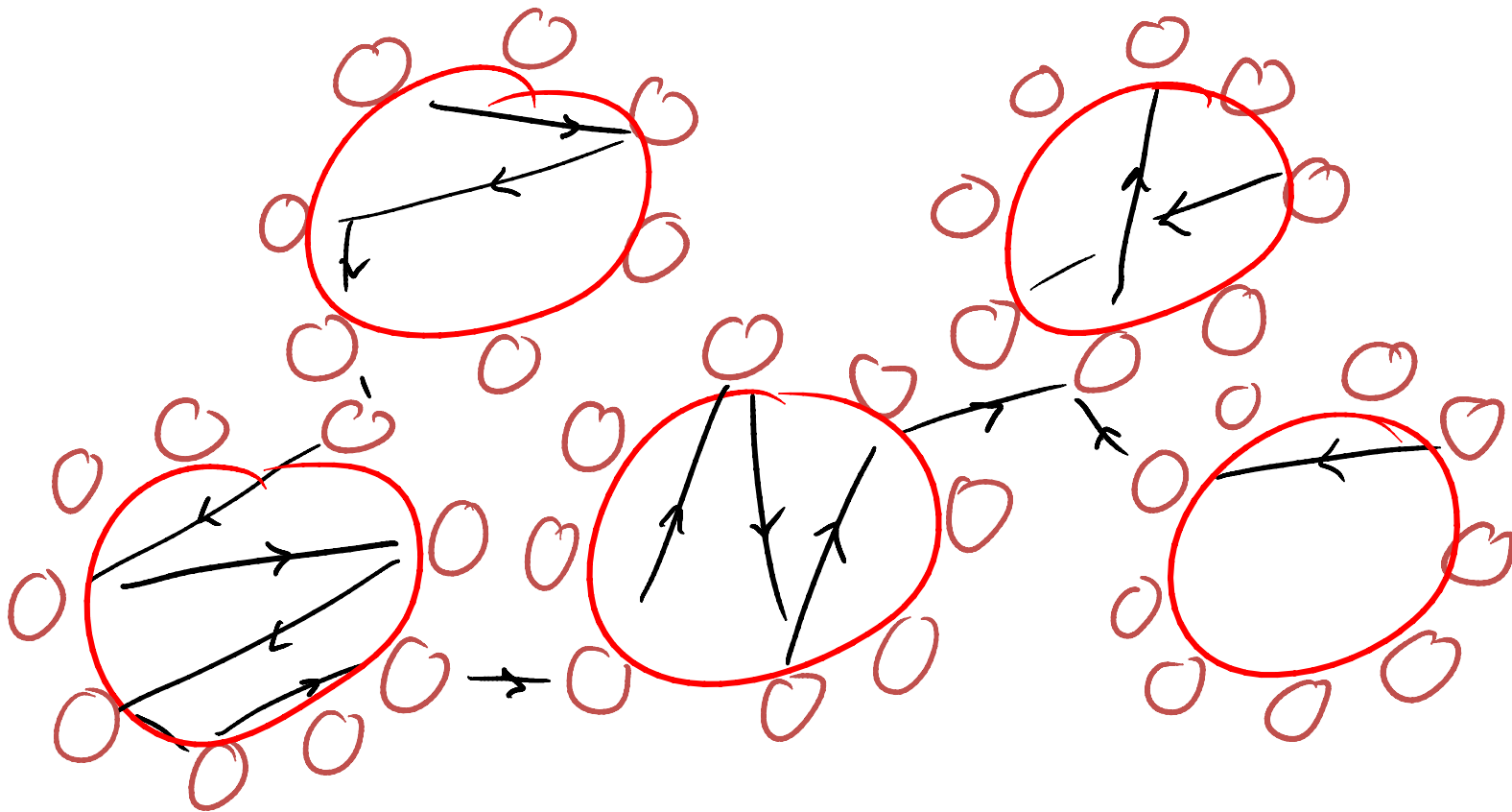
next to registration room
for small-scale discussions
with boards, sofas ...
(Or for a nap.)

ROUND THE CLOCK COFFEE ...

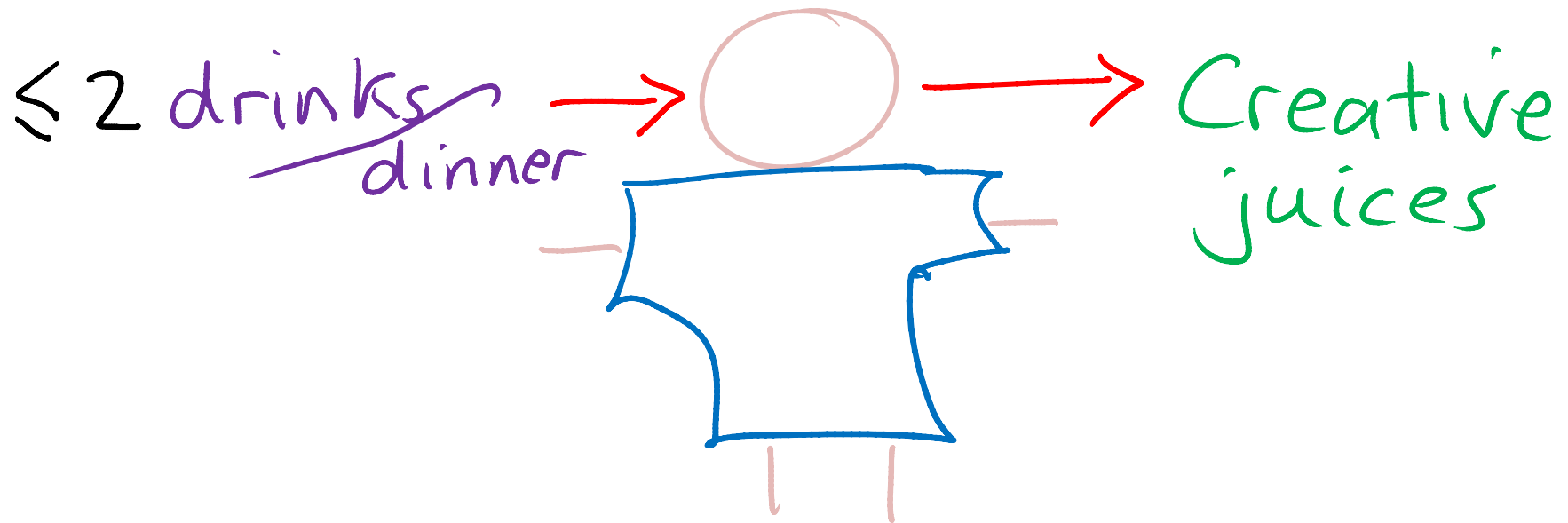
can be brought here or to
discussion room

EATING TOGETHER

to keep critical mass for further discussion



BEER & WINE



FINAL THEORY PANEL

WE WILL TRY TO GET
SOME DEEP THEORISTS TO

- PEER INTO THE FUTURE
- TELL US THEIR CONCERNS
- ADVISE US ON TACTICS
- TELL US THEIR FAVORITE SEARCHES
- ANSWER YOUR QUESTIONS
- SPEAK FROM THE HEART