The Cosmological Constant

The Gauge Hierarchy

Inflation

Axionic Dark Matter
The universe is very big and very diverse

Acceptable fine tuning if it's on the Landscape and essential for our own existence.

If it is not found on the landscape then it's in the swampland

Vafa et al
5D gravity      =       4D qft
warping      =    running
IR  brane     = mass gap
closed string  =   glueball
open string = meson
5D gravity = 4D qft

warping = running

IR brane = mass gap

closed string = glueball

open string = meson

Randall Sundrum = Technicolor
Natural

Technicolor---Randall Sundrum

Low Energy Supersymmetry

Fine Tuning

Anthropic

Landscape

split susy

Higgs Mass
Eternal Inflation $\longrightarrow$ Inflation

Anthropic?
\[ V > V_{\text{ESCAPE}} \]

How many efoldings are needed to dilute curvature so that structure can form?
Observed Flatness Today

$N > 62$

Anthropic (structure) Bound

$N > 59.5$
\[ V = V_0 \left( 1 - \frac{x}{\Delta} \right) \]

\[ P(N) \sim \frac{1}{N^4} \]