

Emergence lec 13 —

The process of using the reductionistic theory involves:

⇒ initial conditions vs. "LAWs".
contingent vs. timeless absolute.

→ things are explained in terms of the ultimate initial condition — Big Bang.

Determinism vs. Randomness.

Classical Mech — deterministic.

Initial conditions + Laws
→ Certain predictions.

— quantum processes are inherently random (radioactive decay),
probabilities are determined, in QM

— symmetry + symmetry breaking
— amplify initial noise.
— large consequences from small effects.

— instability.

galaxy → gravitational
instability.
(dark matter),

Bode's Law — counter example
to the usual
reductionistic method.

data → general law → confirm...

Some "explanations" are
unsatisfactory!

→ Sand demo,