Monte Carlo Video - basic principles

1/12/25

- Monte Carlo Simulations are simulations evolving randomly

- Law of Large numbers
  - average becomes close to expected value with more samples (Large N)
  - Result confidence increases with sample size

- Randomness removes bias
  - don't need to measure all (Time & Resource consuming)
  - Random sample, averaged

- Fluctuations away from True result get smaller with ↑ sample size

- Possible paths can be near infinite ∴ almost impossible to model

=> • simulate representative group

=> • for unbiased group, employ randomness

- again, more samples = more accurate

- When near Infinite No. possibilities => Monte Carlo Simulations
  - take random subset, extrapolate up!

"Monte Carlo Simulations" by MarbleScience