**Simulation Datasets**

R2, S2, D2, S3, D3

Regular

Static heterogeneity

Dynamic heterogeneity

+/- Variable information content (e.g., photobleaching or tether dissociation)

+/- Variable SNR (3, 6, 9)

**Input function**

SNR: float

Truncation: bool

Restart #: int

**Output function**

RNG-seed stabilized datasets

**Regular 2**

1D data

Two states

Emissions – 0, 1

SNR – 2.5, 5, 7.5, 10 🡪 sigma = (1-0)/SNR ---- if too slow just do 10…

Gaussian noise

N\_mol = 200

T = 1000

N\_restarts = 100

Transition Probability

Transition probability not rate constants

Keq of 2

4% and 2%

**Static 2**

Just like regular but static heterogeneity in kinetics – fast and slow

25% of traces are different, 75% are regular

25% same Keq but faster (4% and 8% (transition matrix probabilities))

**Dynamic 2**

Similar to static numbers

25% of a trace is fast mode and 75% is slow mode

N\_flips per trace = 2

T/N\_flips is the dwell. Dwell is .25\*T/N\_flips for fast and .75\*T/N\_flips for slow. Inverse is probability

**Static 3**

Just like regular static but with 2 states and 3 states not fast and slow

25% three states (the third state is emission .75 and TP 3% and the other states get split in half (same self transition)), 75% are regular 2 traces

**Dynamic 3**

Korak will figure this out b/c he wants to do it