A Spike Trains To Decode

Cells

19

1

0   Time [ms]   280

B

Firing Rate [spikes / s]

17

0

0   Position [cm]   180

C Movement Dynamic Models

Previous Position

Stationary

Continuous

Fragmented

−10   0   10
Position bins

0.0   0.2
Probability of current position

D Transition Prob. between Movement Dynamics

Previous Dynamic

Stat. | 0.98 | 0.01 | 0.01
Cont. | 0.01 | 0.98 | 0.01
Frag. | 0.01 | 0.01 | 0.98

Stat.   Cont.   Frag.
Current Dynamic

Acausal Decoding

E

Movement Dynamic:
— Stationary
— Continuous
— Fragmented

Classification:
Stat. | S-C-M | Cont.
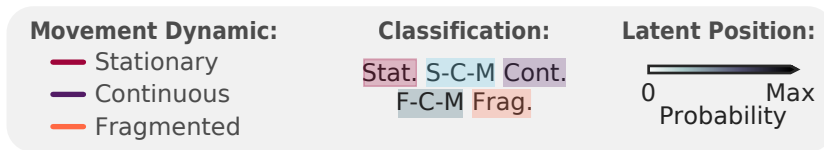F-C-M | Frag.

Latent Position:
0   Max
Probability

F

Classification Threshold

● Avg. prob. of dynamic for one trajectory