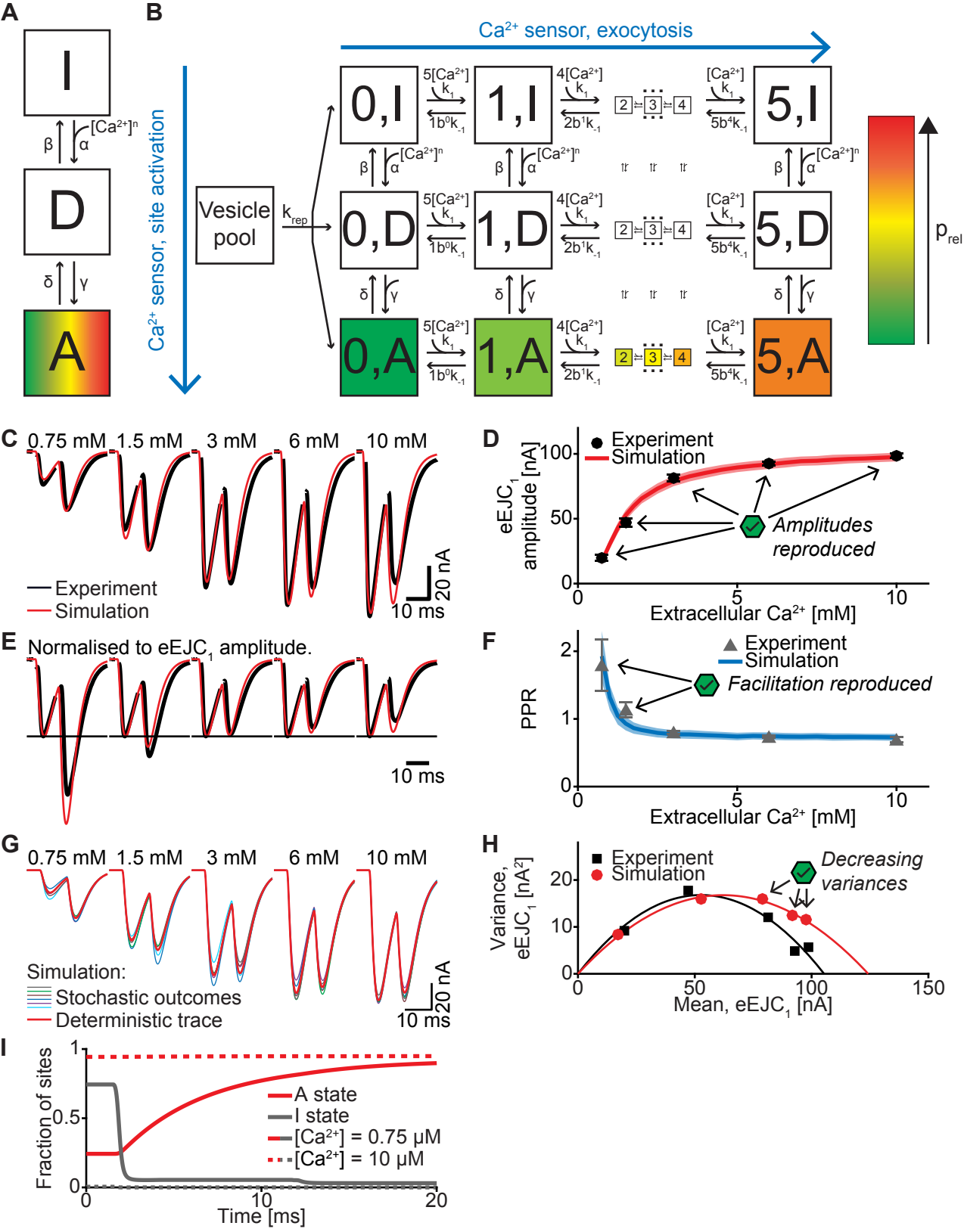
A
I
D
A
β
α
[Ca2+]n
δ
γ
B
Ca2+ sensor, exocytosis
Ca2+ sensor, site activation
Vesicle pool
krep
0,I
1,I
5,I
0,D
1,D
5,D
0,A
1,A
5,A
5[Ca2+]
k1
1b0k-1
4[Ca2+]
2b1k-1
[Ca2+]
5b4k-1
2
3
4
prel
C
0.75 mM
1.5 mM
3 mM
6 mM
10 mM
Experiment
Simulation
20 nA
10 ms
D
Experiment
Simulation
eEJC1 amplitude [nA]
Amplitudes reproduced
Extracellular Ca2+ [mM]
E
Normalised to eEJC1 amplitude.
10 ms
F
Experiment
Simulation
Facilitation reproduced
PPR
Extracellular Ca2+ [mM]
G
0.75 mM
1.5 mM
3 mM
6 mM
10 mM
Simulation:
Stochastic outcomes
Deterministic trace
20 nA
10 ms
H
Experiment
Simulation
Decreasing variances
Variance, eEJC1 [nA2]
Mean, eEJC1 [nA]
I
Fraction of sites
A state
I state
[Ca2+] = 0.75 μM
[Ca2+] = 10 μM
Time [ms]