

## Appendix A: Stable and unstable parameter setting for the cortical microcircuit model

Parameter	Stable case	Unstable case
Growth curve type	Gaussian	Gaussian
Growth rate excitatory dendritic	0.0001	0.0001
Growth rate excitatory axonal	0.00018	0.0001
Growth rate inhibitory dendritic	0.0001	0.0001
Growth rate inhibitory axonal	0.00025	0.0001
$\eta$ excitatory	0.0	0.0
$\eta$ inhibitory	0.0	0.0
$\epsilon$ excitatory L23 dendritic	0.05	0.05
$\epsilon$ inhibitory L23 dendritic	0.2	0.2
$\epsilon$ excitatory L23 axonal	0.05	0.05
$\epsilon$ inhibitory L23 axonal	0.2	0.2
$\epsilon$ excitatory L4 dendritic	0.26	0.26
$\epsilon$ inhibitory L4 dendritic	0.45	0.45
$\epsilon$ excitatory L4 axonal	0.26	0.26
$\epsilon$ inhibitory L4 axonal	0.45	0.45
$\epsilon$ excitatory L5 dendritic	0.55	0.55
$\epsilon$ inhibitory L5 dendritic	0.5	0.5
$\epsilon$ excitatory L5 axonal	0.55	0.55
$\epsilon$ inhibitory L5 axonal	0.5	0.5
$\epsilon$ excitatory L6 dendritic	0.35	0.35
$\epsilon$ inhibitory L6 dendritic	0.59	0.59
$\epsilon$ excitatory L6 axonal	0.35	0.35
$\epsilon$ inhibitory L6 axonal	0.59	0.59

Table 1: Parameters used for simulations of the cortical microcircuit