

# Computational model list

1. [2 Distinct Classes of L2 and L3 Pyramidal Neurons in Human Temporal Cortex \(Deitcher et al 2017\)](#).
2. [2D model of olfactory bulb gamma oscillations \(Li and Cleland 2017\)](#).
3. [3D model of the olfactory bulb \(Migliore et al. 2014\)](#).
4. [3D olfactory bulb: operators \(Migliore et al, 2015\)](#).
5. [3D-printer visualization of NEURON models \(McDougal and Shepherd, 2015\)](#).
6. [5-neuron-model of neocortex for producing realistic extracellular AP shapes \(Van Dijk et al. 2012\)](#).
7. [A 1000 cell network model for Lateral Amygdala \(Kim et al. 2013\)](#).
8. [A 3D population model of midget retinal ganglion cells at the human fovea \(Italiano et al, 2022\)](#).
9. [A basal ganglia model of aberrant learning \(Ursino et al. 2018\)](#).
10. [A biophysical model of thalamocortical network switching under propofol \(Soplata et al., 2023\)](#).
11. [A biophysical model of vestibular ganglion neurons \(Hight & Kalluri 2016, Ventura & Kalluri 2018\)](#).
12. [A bistable model of Spike-Wave seizure and background activity \(Taylor et al. 2014\)](#).
13. [A cardiac cell simulator \(Puglisi and Bers 2001\), applied to the QT interval \(Busjahn et al 2004\)](#).
14. [A cerebellar model of phase-locked tACS for essential tremor \(Schreglmann et al., 2021\)](#).
15. [A comparative computer simulation of dendritic morphology \(Donohue and Ascoli 2008\)](#).
16. [A comparison of mathematical models of mood in bipolar disorder \(Cochran et al. 2017\)](#).
17. [A computational approach/model to explore NMDA receptors functions \(Keller et al 2017\)](#).
18. [A computational model for fast skeletal muscle \(Kim and Heckman, accepted\)](#).
19. [A Computational Model for the Binocular Vector Disparity Estimation \(Chessa & Solari 2018\)](#).
20. [A computational model of a small DRG neuron to explore pain \(Verma et al. 2019, 2020\)](#).
21. [A computational model of action selection in the basal ganglia \(Suryanarayana et al 2019\)](#).
22. [A Computational Model of Bidirectional Plasticity Regulation by betaCaMKII \(Pinto et al. 2019\)](#).
23. [A computational model of oxytocin modulation of olfactory recognition memory \(Linster & Kelsch 2019\)](#).
24. [A computational model of single-neuron perturbations \(Sadeh and Clopath 2020\)](#).
25. [A computational model of systems memory consolidation and reconsolidation \(Helfer & Shultz 2019\)](#).
26. [A contracting model of the basal ganglia \(Girard et al. 2008\)](#).
27. [A CORF computational model of a simple cell that relies on LGN input \(Azzopardi & Petkov 2012\)](#).
28. [A cortical sheet mesoscopic model for investigating focal seizure onset dynamics \(Wang et al. 2014\)](#).
29. [A cortico-cerebello-thalamo-cortical loop model under essential tremor \(Zhang & Santaniello 2019\)](#).
30. [A dendritic disinhibitory circuit mechanism for pathway-specific gating \(Yang et al. 2016\)](#).
31. [A detailed and fast model of extracellular recordings \(Camunas-Mesa & Qurioga 2013\)](#).
32. [A detailed data-driven network model of prefrontal cortex \(Hass et al 2016\)](#).
33. [A detailed Purkinje cell model \(Masoli et al 2015\)](#).
34. [A dual-Ca<sup>2+</sup>-sensor model for neurotransmitter release in a central synapse \(Sun et al. 2007\)](#).
35. [A dynamic model of the canine ventricular myocyte \(Hund, Rudy 2004\)](#).
36. [A dynamical model of the basal ganglia \(Leblois et al 2006\)](#).

37. [A fast model of voltage-dependent NMDA Receptors \(Moradi et al. 2013\)](#).
38. [A Fast Rhythmic Bursting Cell: in vivo cell modeling \(Lee 2007\)](#).
39. [A finite volume method for stochastic integrate-and-fire models \(Marpeau et al. 2009\)](#).
40. [A focal seizure model with ion concentration changes \(Gentiletti et al., 2022\)](#).
41. [A four compartmental model for ABPD complex in crustacean pyloric network \(Maran et al. 2011\)](#).
42. [A full-scale cortical microcircuit spiking network model \(Shimoura et al 2018\)](#).
43. [A gap junction network of Amacrine Cells controls Nitric Oxide release \(Jacoby et al 2018\)](#).
44. [A general model of hippocampal and dorsal striatal learning and decision making \(Geerts et al 2020\)](#).
45. [A generic MAPK cascade model for random parameter sampling analysis \(Mai and Liu 2013\)](#).
46. [A kinetic model of dopamine- and calcium-dependent striatal synaptic plasticity \(Nakano et al. 2010\)](#).
47. [A kinetic model unifying presynaptic short-term facilitation and depression \(Lee et al. 2009\)](#).
48. [A large-scale model of the functioning brain \(spaun\) \(Eliasmith et al. 2012\)](#).
49. [A Layer V CCS type pyramidal cell, inhibitory synapse current conduction \(Kubota Y et al., 2015\)](#).
50. [A Markov model of human Cav2.3 channels and their modulation by Zn<sup>2+</sup> \(Neumaier et al 2020\)](#).
51. [A mathematical model of a neurovascular unit \(Dormanns et al 2015, 2016\) \(Farrs & David 2011\)](#).
52. [A mathematical model of evoked calcium dynamics in astrocytes \(Handy et al 2017\)](#).
53. [A Method for Prediction of Receptor Activation in the Simulation of Synapses \(Montes et al. 2013\)](#).
54. [A microcircuit model of the frontal eye fields \(Heinzle et al. 2007\)](#).
55. [A Model Circuit of Thalamocortical Convergence \(Behuret et al. 2013\)](#).
56. [A model for a nociceptor terminal and terminal tree \(Barkai et al., 2020\)](#).
57. [A model for early afterdepolarizations in the cardiomyocyte action potential \(Kimrey et al., 2022\)](#).
58. [A model for focal seizure onset, propagation, evolution, and progression \(Liou et al 2020\)](#).
59. [A model for how correlation depends on the neuronal excitability type \(Hong et al. 2012\)](#).
60. [A model for interaural time difference sensitivity in the medial superior olive \(Zhou et al 2005\)](#).
61. [A model for pituitary GH\(3\) lactotroph \(Wu and Chang 2005\)](#).
62. [A model for recurrent spreading depolarizations \(Conte et al. 2017\)](#).
63. [A model of antennal lobe of bee \(Chen JY et al. 2015\)](#).
64. [A model of ASIC1a and synaptic cleft pH modulating wind-up in wide dynamic range neurons \(Delrocq\)](#).
65. [A model of beta-adrenergic modulation of IKs in the guinea-pig ventricle \(Severi et al. 2009\)](#).
66. [A model of cerebellar LTD including RKIP inactivation of Raf and MEK \(Hepburn et al 2017\)](#).
67. [A model of closed-loop motor unit including muscle spindle feedback \(Kim, 2020\)](#).
68. [A model of local field potentials generated by medial superior olive neurons \(Goldwyn et al 2014\)](#).
69. [A Model of Multiple Spike Initiation Zones in the Leech C-interneuron \(Crisp 2009\)](#).
70. [A model of neuronal bursting using three coupled first order diff. eqs. \(Hindmarsh & Rose 1984\)](#).
71. [A model of neurovascular coupling and the BOLD response \(Mathias et al 2017, Kenny et al 2018\)](#).
72. [A model of optimal learning with redundant synaptic connections \(Hiratani & Fukai 2018\)](#).
73. [A Model of Selection between Stimulus and Place Strategy in a Hawkmoth \(Balkenius et al. 2004\)](#).

74. [A model of slow motor unit \(Kim, 2017\)](#).
75. [A model of the femur-tibia control system in stick insects \(Stein et al. 2008\)](#).
76. [A model of the T-junction of a C-fiber sensory neuron \(Sundt et al. 2015\)](#).
77. [A model of the temporal pattern generator of C. elegans egg-laying behavior \(Zhang et. al 2010\)](#).
78. [A model of unitary responses from A/C and PP synapses in CA3 pyramidal cells \(Baker et al. 2010\)](#).
79. [A model of ventral Hippocampal CA1 pyramidal neurons of Tg2576 AD mice \(Spoleti et al. 2021\)](#).
80. [A model of working memory for encoding multiple items \(Ursino et al. in press\)](#).
81. [A modified Morris-Lecar model with gM and gAHP \(Yang et al., 2022\)](#).
82. [A modified Morris-Lecar with TRPC4 & GIRK \(Tian et al. 2022\)](#).
83. [A Moth MGC Model-A HH network with quantitative rate reduction \(Buckley & Nowotny 2011\)](#).
84. [A multi-compartment model for interneurons in the dLGN \(Hanes et al. 2011\)](#).
85. [A multilayer cortical model to study seizure propagation across microdomains \(Basu et al. 2015\)](#).
86. [A multiphysics neuron model for cellular volume dynamics \(Lee et al. 2011\)](#).
87. [A multiscale approach to analyze circadian rhythms \(Vasalou & Henson, 2010\) \(CellML\)](#).
88. [A multiscale approach to analyze circadian rhythms \(Vasalou & Henson, 2010\) \(SBML\)](#).
89. [A multiscale predictive digital twin for neurocardiac modulation \(Yang et al., 2023\)](#).
90. [A network model of tail withdrawal in Aplysia \(White et al 1993\)](#).
91. [A network model of the vertebrate retina \(Publio et al. 2009\)](#).
92. [A network of AOB mitral cells that produces infra-slow bursting \(Zylbertal et al. 2017\)](#).
93. [A Neural mass computational model of the Thalamocorticothalamic circuitry \(Bhattacharya et al. 2011\)](#).
94. [A neural mass model for critical assessment of brain connectivity \(Ursino et al 2020\)](#).
95. [A neural mass model of cross frequency coupling \(Chehelcheraghi et al 2017\)](#).
96. [A neural model of Parkinson`s disease \(Cutsuridis and Perantonis 2006, Cutsuridis 2006, 2007\)](#).
97. [A neural network model of mathematics anxiety: The role of attention \(Rose et al., 2023\)](#).
98. [A neurite to measure ePSP and AP amplitude after passive spread \(DeMaegd & Stein, 2021\)](#).
99. [A neurocomputational model of classical conditioning phenomena \(Moustafa et al. 2009\)](#).
100. [A neuronal circuit simulator for non Monte Carlo analysis of neuronal noise \(Kilinc & Demir 2018\)](#).
101. [A nicotinic acetylcholine receptor kinetic model \(Edelstein et al. 1996\)](#).
102. [A NN with synaptic depression for testing the effects of connectivity on dynamics \(Jacob et al 2019\)](#).
103. [A novel mechanism for ramping bursts based on slow negative feedback in model respiratory neurons \(John et al., accepted\)](#).
104. [A phantom bursting mechanism for episodic bursting \(Bertram et al 2008\)](#).
105. [A reinforcement learning example \(Sutton and Barto 1998\)](#).
106. [A sensorimotor-spinal cord model \(Hoshino et al. 2022\)](#).
107. [A set of reduced models of layer 5 pyramidal neurons \(Bahl et al. 2012\)](#).
108. [A simple integrative electrophysiological model of bursting GnRH neurons \(Cserecsik et al. 2011\)](#).
109. [A simple model of neuromodulatory state-dependent synaptic plasticity \(Pedrosa and Clopath, 2016\)](#).
110. [A simplified cerebellar Purkinje neuron \(the PPR model\) \(Brown et al. 2011\)](#).

111. [A simplified model of NMDA oscillations in lamprey locomotor neurons \(Huss et al. 2008\)](#)
112. [A simulation method for the firing sequences of motor units \(Jiang et al 2006\)](#)
113. [A single column thalamocortical network model \(Traub et al 2005\)](#)
114. [A single compartment model of Drosophila motor neuron \(Megwa et al 2023\)](#)
115. [A single kinetic model for all human voltage-gated sodium channels \(Balbi et al, 2017\)](#)
116. [A single-cell spiking model for the origin of grid-cell patterns \(D'Albis & Kempter 2017\)](#)
117. [A spatial model of the intermediate superior colliculus \(Moren et. al. 2013\)](#)
118. [A spatially extended model for macroscopic spike-wave discharges \(Taylor and Baier 2011\)](#)
119. [A spiking model of cortical broadcast and competition \(Shanahan 2008\)](#)
120. [A spiking neural network model of model-free reinforcement learning \(Nakano et al 2015\)](#)
121. [A spiking neural network model of the Lateral Geniculate Nucleus \(Sen-Bhattacharya et al 2017\)](#)
122. [A spiking NN for amplification of feature-selectivity with specific connectivity \(Sadeh et al 2015\)](#)
123. [A state-space model to quantify common input to motor neurons \(Feeney et al 2017\)](#)
124. [A synapse model for developing somatosensory cortex \(Manninen et al 2020\)](#)
125. [A systems model of Parkinson's disease using biochemical systems theory \(Sasidharakurup et al. 2017\)](#)
126. [A theory of ongoing activity in V1 \(Goldberg et al 2004\)](#)
127. [A threshold equation for action potential initiation \(Platkiewicz & Brette 2010\)](#)
128. [A two networks model of connectivity-dependent oscillatory activity \(Avella OJ et al. 2014\)](#)
129. [A two-layer biophysical olfactory bulb model of cholinergic neuromodulation \(Li and Cleland 2013\)](#)
130. [A two-stage model of dendritic integration in CA1 pyramidal neurons \(Katz et al. 2009\)](#)
131. [A unified thalamic model of multiple distinct oscillations \(Li, Henriquez and Fröhlich 2017\)](#)
132. [Accelerating with FlyBrainLab discovery of the functional logic of Drosophila brain \(Lazar et al 21\)](#)
133. [Accurate and fast simulation of channel noise in conductance-based model neurons \(Linaro et al 2011\)](#)
134. [Acetylcholine Boosts Dendritic NMDA Spikes in a CA3 Pyramidal Neuron Model \(Humphries et al., 2021\)](#)
135. [Acetylcholine-modulated plasticity in reward-driven navigation \(Zannone et al 2018\)](#)
136. [ACh modulation in olfactory bulb and piriform cortex \(de Almeida et al. 2013; Devore S, et al. 2014\)](#)
137. [ACnet23 primary auditory cortex model \(Beeman et al 2019\)](#)
138. [Action Potential initiation and backpropagation in Neocortical L5 Pyramidal Neuron \(Hu et al. 2009\)](#)
139. [Action potential initiation in the olfactory mitral cell \(Shen et al 1999\)](#)
140. [Action potential of adult rat ventricle \(Wang et al. 2008\)](#)
141. [Action potential of mouse urinary bladder smooth muscle \(Mahapatra et al 2018\)](#)
142. [Action potential of striated muscle fiber \(Adrian et al 1970\)](#)
143. [Action potential reconstitution from measured current waveforms \(Alle et al. 2009\)](#)
144. [Action potential-evoked Ca<sup>2+</sup> signals in CA1 pyramidal cell presynaptic terminals \(Hamid et al 2019\)](#)
145. [Action potential-evoked Na<sup>+</sup> influx are similar in axon and soma \(Fleidervish et al. 2010\)](#)
146. [Action potential-evoked Na<sup>+</sup> influx similar in axon and soma \(Fleidervish et al. 2010\) \(Python\)](#)
147. [Actions of Rotenone on ionic currents and MEPPs in Mouse Hippocampal Neurons \(Huang et al 2018\)](#)

148. [Activator protein 1\(AP-1\) transcriptional regulatory model in brainstem neurons \(Makadia et al 2015\)](#).
149. [Active dendrites and spike propagation in a hippocampal interneuron \(Saraga et al 2003\)](#).
150. [Active dendrites shape signaling microdomains in hippocampal neurons \(Basak & Narayanan 2018\)](#).
151. [Active dendritic action potential propagation \(Casale & McCormick 2011\)](#).
152. [Active dendritic integration in robust and precise grid cell firing \(Schmidt-Hieber et al 2017\)](#).
153. [Active intrinsic conductances in networks, transients, activity, plasticity \(Akosy and Shouval 2021\)](#).
154. [Active zone model of Ca<sup>2+</sup> secretion coupling \(Keller et al. 2015\)](#).
155. [Activity constraints on stable neuronal or network parameters \(Olypher and Calabrese 2007\)](#).
156. [Activity dependent changes in dendritic spine density and spine structure \(Crook et al. 2007\)](#).
157. [Activity dependent changes in motoneurons \(Dai Y et al 2002, Gardiner et al 2002\)](#).
158. [Activity dependent conductances in a neuron model \(Liu et al. 1998\)](#).
159. [Activity dependent regulation of pacemaker channels by cAMP \(Wang et al 2002\)](#).
160. [Activity patterns in a subthalamopallidal network of the basal ganglia model \(Terman et al 2002\)](#).
161. [Activity-dependent broadening of axonal spikes by inactivating K channels \(Zheng & Kamiya 2023\)](#).
162. [Adaptation of Short-Term Plasticity parameters \(Esposito et al. 2015\)](#).
163. [Adaptive dual control of deep brain stimulation in Parkinsons disease simulations \(Grado et al 2018\)](#).
164. [Adaptive exponential integrate-and-fire model \(Brette & Gerstner 2005\)](#).
165. [Adaptive Generalized Leaky Integrate-and-Fire Model \(AGLIF\) \(Marasco et al., 2023\)](#).
166. [Adaptive robotic control driven by a versatile spiking cerebellar network \(Casellato et al. 2014\)](#).
167. [Adjusted regularization of cortical covariance \(Vinci et al 2018\)](#).
168. [Afferent Integration in the NAcb MSP Cell \(Wolf et al. 2005\)](#).
169. [Age-dependent excitability of CA1 pyramidal neurons in APPPS1 Alzheimer's model \(Vitale et al 2021\)](#).
170. [AIS model of L5 cortical pyramidal neuron \(Filipis et al., 2023\)](#).
171. [Alcohol action in a detailed Purkinje neuron model and an efficient simplified model \(Forrest 2015\)](#).
172. [Alcohol excites Cerebellar Golgi Cells by inhibiting the Na<sup>+</sup>/K<sup>+</sup> ATPase \(Botta et al.2010\)](#).
173. [Allen Institute: Gad2-IRES-Cre VISp layer 5 472447460](#)
174. [Allen Institute: Gad2-IRES-Cre VISp layer 5 473561729](#)
175. [Allen Institute: Htr3a-Cre VISp layer 2/3 472352327](#)
176. [Allen Institute: Htr3a-Cre VISp layer 2/3 472421285](#)
177. [Allen Institute: Nr5a1-Cre VISp layer 2/3 473862496](#)
178. [Allen Institute: Nr5a1-Cre VISp layer 4 329322394](#)
179. [Allen Institute: Nr5a1-Cre VISp layer 4 472306544](#)
180. [Allen Institute: Nr5a1-Cre VISp layer 4 472442377](#)
181. [Allen Institute: Nr5a1-Cre VISp layer 4 472451419](#)
182. [Allen Institute: Nr5a1-Cre VISp layer 4 472915634](#)
183. [Allen Institute: Nr5a1-Cre VISp layer 4 473834758](#)
184. [Allen Institute: Nr5a1-Cre VISp layer 4 473863035](#)



185. [Allen Institute: Nr5a1-Cre VISp layer 4 473871429](#)
186. [Allen Institute: Ntsr1-Cre VISp layer 4 472430904](#)
187. [Allen Institute: Pvalb-IRES-Cre VISp layer 2/3 472306616](#)
188. [Allen Institute: Pvalb-IRES-Cre VISp layer 5 471085845](#)
189. [Allen Institute: Pvalb-IRES-Cre VISp layer 5 472349114](#)
190. [Allen Institute: Pvalb-IRES-Cre VISp layer 5 472912177](#)
191. [Allen Institute: Pvalb-IRES-Cre VISp layer 5 473465774](#)
192. [Allen Institute: Pvalb-IRES-Cre VISp layer 5 473862421](#)
193. [Allen Institute: Pvalb-IRES-Cre VISp layer 6a 471081668](#)
194. [Allen Institute: Pvalb-IRES-Cre VISp layer 6a 472301074](#)
195. [Allen Institute: Pvalb-IRES-Cre VISp layer 6a 473860269](#)
196. [Allen Institute: Rbp4-Cre VISp layer 5 472424854](#)
197. [Allen Institute: Rbp4-Cre VISp layer 6a 473871592](#)
198. [Allen Institute: Rorb-IRES2-Cre-D VISp layer 2/3 472299294](#)
199. [Allen Institute: Rorb-IRES2-Cre-D VISp layer 2/3 472434498](#)
200. [Allen Institute: Rorb-IRES2-Cre-D VISp layer 4 473863510](#)
201. [Allen Institute: Rorb-IRES2-Cre-D VISp layer 5 471087975](#)
202. [Allen Institute: Rorb-IRES2-Cre-D VISp layer 5 473561660](#)
203. [Allen Institute: Scnn1a-Tg2-Cre VISp layer 4 472300877](#)
204. [Allen Institute: Scnn1a-Tg2-Cre VISp layer 4 472427533](#)
205. [Allen Institute: Scnn1a-Tg2-Cre VISp layer 4 472912107](#)
206. [Allen Institute: Scnn1a-Tg2-Cre VISp layer 4 473465456](#)
207. [Allen Institute: Scnn1a-Tg2-Cre VISp layer 5 472306460](#)
208. [Allen Institute: Scnn1a-Tg3-Cre VISp layer 4 329321704](#)
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212. [Allen Institute: Scnn1a-Tg3-Cre VISp layer 5 472455509](#)
213. [Allen Institute: Scnn1a-Tg3-Cre VISp layer 5 473863578](#)
214. [Allen Institute: Scnn1a-Tg3-Cre VISp layer 5 473871773](#)
215. [Allen Institute: Sst-IRES-Cre VISp layer 2/3 471086533](#)
216. [Allen Institute: Sst-IRES-Cre VISp layer 2/3 472304676](#)
217. [Allen Institute: Sst-IRES-Cre VISp layer 4 472304539](#)
218. [Allen Institute: Sst-IRES-Cre VISp layer 5 472299363](#)
219. [Allen Institute: Sst-IRES-Cre VISp layer 5 472450023](#)
220. [Allen Institute: Sst-IRES-Cre VISp layer 5 473835796](#)
221. [Allen Institute: Sst-IRES-Cre VISp layer 6a 472440759](#)

222. [Alleviating catastrophic forgetting: context gating and synaptic stabilization \(Masse et al 2018\)](#).
223. [Allosteric gating of K channels \(Horrigan et al 1999\)](#).
224. [Alpha rhythm in vitro visual cortex \(Traub et al 2020\)](#).
225. [Altered complexity in layer 2/3 pyramidal neurons \(Luuk van der Velden et al. 2012\)](#).
226. [Alternative time representation in dopamine models \(Rivest et al. 2009\)](#).
227. [Ambient glutamate shapes AMPA receptor responses to simulated transients \(Balmer et al. 2021\)](#).
228. [Ambiguous Encoding and Distorted Perception \(Carlson and Kawasaki 2006\)](#).
229. [AMPA receptor trafficking and its role in heterosynaptic plasticity \(Antunes et al 2018\)](#).
230. [Amyloid beta \(1A block\) effects on a model CA1 pyramidal cell \(Morse et al. 2010\)](#).
231. [Amyloid-beta effects on release probability and integration at CA3-CA1 synapses \(Romani et al. 2013\)](#).
232. [An agent-based computational model for cortical layer formation \(Bauer et al 2021\)](#).
233. [An allosteric kinetics of NMDARs in STDP \(Urakubo et al. 2008\)](#).
234. [An attractor network model of grid cells and theta-nested gamma oscillations \(Pastoll et al 2013\)](#).
235. [An electrophysiological model of GABAergic double bouquet cells \(Chrysanthidis et al. 2019\)](#).
236. [An integrated deep learning-based model of spatial cells that combines self-motion with sensory information \(Aziz et al., 2022\)](#).
237. [An integrative dynamic model of brain energy metabolism \(Coultier et al 2009\)](#).
238. [An ion-based model for swelling of neurons and astrocytes \(Hubel & Ullah 2016\)](#).
239. [An ODE model of the inspiratory & sigh rhythms \(Borrus et al., 2024\)](#).
240. [An oscillatory neural autoencoder based on frequency modulation and multiplexing \(Soman et al 2018\)](#).
241. [An oscillatory neural model of multiple object tracking \(Kazanovich and Borisyuk 2006\)](#).
242. [Analytical modelling of temperature effects on an AMPA-type synapse \(Kufel & Wojcik 2018\)](#).
243. [Analyzing neural time series data theory and practice \(Cohen 2014\)](#).
244. [Anoxic depolarization, recovery: effect of brain regions and extracellular space \(Hubel et al. 2016\)](#).
245. [AOB mitral cell: persistent activity without feedback \(Zylbertal et al., 2015\)](#).
246. [AP back-prop. explains threshold variability and rapid rise \(McCormick et al. 2007, Yu et al. 2008\)](#).
247. [AP initiation and propagation in type II cochlear ganglion cell \(Hossain et al 2005\)](#).
248. [AP initiation, propagation, and cortical invasion in a Layer 5 pyramidal cell \(Anderson et al 2018\)](#).
249. [AP shape and parameter constraints in optimization of compartment models \(Weaver and Wearne 2006\)](#).
250. [Apical Length Governs Computational Diversity of Layer 5 Pyramidal Neurons \(Galloni et al 2020\)](#).
251. [Aplysia LTF model \(Liu et al, 2020; Zhang et al, 2021; Liu et al 2022\)](#).
252. [Application of a common kinetic formalism for synaptic models \(Destexhe et al 1994\)](#).
253. [Arteriolar networks: Spread of potential \(Crane et al 2001\)](#).
254. [Artificial neuron model \(Izhikevich 2003, 2004, 2007\)](#).
255. [Astrocyte and Blood Vessel Calcium Imaging Tracking code \(Haidey et al 2021\)](#).
256. [Asynchronous irregular and up/down states in excitatory and inhibitory NNs \(Destexhe 2009\)](#).
257. [Auditory cortex layer IV network model \(Beeman 2013\)](#).
258. [Auditory nerve model for predicting performance limits \(Heinz et al 2001\)](#).

259. [Auditory nerve model with linear tuning](#) (Heinz et al 2001).
260. [Auditory nerve response model](#) (Tan, Carney 2003).
261. [Auditory nerve response model](#) (Zhang et al 2001).
262. [Auditory nerve spontaneous rate histograms](#) (Jackson and Carney 2005).
263. [Automated metadata suggester](#) (McDougal et al 2018).
264. [Availability of low-threshold  \$\text{Ca}^{2+}\$  current in retinal ganglion cells](#) (Lee SC et al. 2003).
265. [Ave. neuron model for slow-wave sleep in cortex](#) Tatsuki 2016 Yoshida 2018 Rasmussen 2017 (all et al).
266. [Axon growth model](#) (Diehl et al. 2016).
267. [Axon-somatic back-propagation in a detailed model of cat spinal motoneuron](#) (Balbi et al, 2015).
268. [Axonal gap junctions produce fast oscillations in cerebellar Purkinje cells](#) (Traub et al. 2008).
269. [Axonal HH-model for temperature stimulation](#) (Fribance et al 2016).
270. [Axonal K channel inhibition promotes ectopic burst of hippocampal mossy fiber](#) (Kamiya 2024).
271. [Axonal  \$\text{NaV}1.6\$  Sodium Channels in AP Initiation of CA1 Pyramidal Neurons](#) (Royer et al. 2008).
272. [Axonal Projection and Interneuron Types](#) (Helmstaedter et al. 2008).
273. [Axonal spheroids and conduction defects in Alzheimer's disease](#) (Yuan, Zhang, Tong, et al 2022).
274. [Axonal subthreshold voltage signaling along hippocampal mossy fiber](#) (Kamiya 2022).
275. [Balance of excitation and inhibition](#) (Carvalho and Buonomano 2009).
276. [Basal Ganglia and Levodopa Pharmacodynamics model for parameter estimation in PD](#) (Ursino et al 2020).
277. [Basal ganglia motor function and the inverse kinematics calculation](#) (Salimi-Badr et al 2017).
278. [Basal Ganglia motor-circuit for kinematic planning of arm movements](#) (Salimi-Badr et al 2017).
279. [Basal ganglia network model of subthalamic deep brain stimulation](#) (Hahn and McIntyre 2010).
280. [Basal ganglia-corticothalamic \(BGCT\) network](#) (Chen et al., 2014).
281. [Basal ganglia-thalamic network model for deep brain stimulation](#) (So et al. 2012).
282. [Basal ganglia-thalamocortical loop model of action selection](#) (Humphries and Gurney 2002).
283. [Basis for temporal filters in the cerebellar granular layer](#) (Roessert et al. 2015).
284. [Basket cell extrasynaptic inhibition modulates network oscillations](#) (Proddutur et al., 2013).
285. [BCM-like synaptic plasticity with conductance-based models](#) (Narayanan Johnston, 2010).
286. [BDNF morphological contributions to AP enhancement](#) (Galati et al. 2016).
287. [Behavioral time scale synaptic plasticity underlies CA1 place fields](#) (Bittner et al. 2017).
288. [Beta-cell hubs maintain  \$\text{Ca}^{2+}\$  oscillations in human and mouse islet simulations](#) (Lei et al 2018).
289. [Binocular energy model set for binocular neurons in optic lobe of praying mantis](#) (Rosner et al 2019).
290. [Biochemical Systems Theory Model of SARS-CoV-2 infection network](#) (Sasidharakurup et al., 2021).
291. [Biochemical Systems Theory Model of TNF \$\alpha\$  related pathways](#) (Sasidharakurup and Diwakar 2020).
292. [Biochemically detailed model of LTP and LTD in a cortical spine](#) (Maki-Marttunen et al 2020).
293. [Biochemically detailed model of post-synaptic plasticity for computational analyses of schizophrenia](#) (Maki-Marttunen et al. in press).
294. [Biologically Constrained Basal Ganglia model \(BCBG model\)](#) (Lienard, Girard 2014).
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581. [Dendritic processing of excitatory synaptic input in GnRH neurons \(Roberts et al. 2006\)](#).
582. [Dendritic properties control energy efficiency of APs in cortical pyramidal cells \(Yi et al 2017\)](#).
583. [Dendritic signals command firing dynamics in a Cerebellar Purkinje Cell model \(Genet et al. 2010\)](#).
584. [Dendritic spikes enhance stimulus selectivity in cortical neurons in vivo \(Smith et al 2013\)](#).
585. [Dendritic spine geometry, spine apparatus organization: spatiotemporal Ca dynamics \(Bell et al 2019\)](#).
586. [Dendritic tip geometry effects electrical properties \(Tsutsui, Oka 2001\)](#).
587. [Dendritica \(Vetter et al 2001\)](#).
588. [Dendro-dendritic synaptic circuit \(Shepherd Brayton 1979\)](#).
589. [Dentate Basket Cell: spatial summation of inhibitory synaptic inputs \(Bartos et al 2001\)](#).
590. [Dentate granule cell: mAHP & sAHP; SK & Kv7/M channels \(Mateos-Aparicio et al., 2014\)](#).

591. [Dentate gyrus \(Morgan et al. 2007, 2008, Santhakumar et al. 2005, Dyhrfeld-Johnsen et al. 2007\)](#)
592. [Dentate Gyrus Feed-forward inhibition \(Ferrante et al. 2009\)](#)
593. [Dentate gyrus granule cell: calcium and calcium-dependent conductances \(Aradi and Holmes 1999\)](#)
594. [Dentate gyrus granule cell: subthreshold signal processing \(Schmidt-Hieber et al. 2007\)](#)
595. [Dentate Gyrus model including Granule cells with dendritic compartments \(Chavlis et al 2017\)](#)
596. [Dentate gyrus network model \(Santhakumar et al 2005\)](#)
597. [Dentate gyrus network model \(Tejada et al 2014\)](#)
598. [Dentate gyrus network model pattern separation and granule cell scaling in epilepsy \(Yim et al 2015\)](#)
599. [Dependence of neuronal firing on astroglial membrane transport mechanisms \(Oyehaug et al 2012\)](#)
600. [Depolarization Enhancement of Dendritic Spike Propagation \(Bock et al 2022\)](#)
601. [Detailed analysis of trajectories in the Morris water maze \(Gehring et al. 2015\)](#)
602. [Detailed passive cable model of Dentate Gyrus Basket Cells \(Norenberg et al. 2010\)](#)
603. [Determinants of fast calcium dynamics in dendritic spines and dendrites \(Cornelisse et al. 2007\)](#)
604. [Determinants of the intracellular and extracellular waveforms in DA neurons \(Lopez-Jury et al 2018\)](#)
605. [Deterministic chaos in a mathematical model of a snail neuron \(Komendantov and Kononenko 1996\)](#)
606. [Development and Binocular Matching of Orientation Selectivity in Visual Cortex \(Xu et al 2020\)](#)
607. [Development of modular activity of grid cells \(Urdapilleta et al 2017\)](#)
608. [Development of orientation-selective simple cell receptive fields \(Rishikesh and Venkatesh, 2003\)](#)
609. [DG adult-born granule cell: nonlinear  \$\alpha 5\$ -GABAARs control AP firing \(Lodge et al, 2021\)](#)
610. [DG granule cell: I-A model \(Beck et al 1992\)](#)
611. [Diameter, Myelination and Na/K pump interactions affect axonal resilience to high frequency spiking](#)
612. [Dichotomy of action-potential backpropagation in CA1 pyramidal neuron dendrites \(Golding et al 2001\)](#)
613. [Differences between type A and B photoreceptors \(Blackwell 2006\)](#)
614. [Different responses of mice and rats hippocampus CA1 pyramidal neurons to in vitro and in vivo-like inputs \(vitale et al., 2023\)](#)
615. [Different roles for inhibition in the rhythm-generating respiratory network \(Harris et al 2017\)](#)
616. [Differential interactions between Notch and ID factors control neurogenesis \(Boareto et al 2017\)](#)
617. [Differential modulation of pattern and rate in a dopamine neuron model \(Canavier and Landry 2006\)](#)
618. [Diffusive homeostasis in a spiking network model \(Sweeney et al. 2015\)](#)
619. [Dipolar extracellular potentials generated by axonal projections \(McColgan et al 2017\)](#)
620. [Dipole Localization Kit \(Mechler & Victor, 2012\)](#)
621. [Direct recruitment of S1 pyramidal cells and interneurons via ICMS \(Overstreet et al., 2013\)](#)
622. [Discharge hysteresis in motoneurons \(Powers & Heckman 2015\)](#)
623. [Discrete event simulation in the NEURON environment \(Hines and Carnevale 2004\)](#)
624. [Discrimination on behavioral time-scales mediated by reaction-diffusion in dendrites \(Bhalla 2017\)](#)
625. [Disentangling astroglial physiology with a realistic cell model in silico \(Savtchenko et al 2018\)](#)
626. [Disrupted information processing in Fmr1-KO mouse layer 4 barrel cortex \(Domanski et al 2019\)](#)
627. [Distal inhibitory control of sensory-evoked excitation \(Egger, Schmitt et al. 2015\)](#)

- 628. [Distance-dependent inhibition in the hippocampus \(Strüber et al. 2017\)](#).
- 629. [Distance-dependent synaptic strength in CA1 pyramidal neurons \(Menon et al. 2013\)](#).
- 630. [Distinct current modules shape cellular dynamics in model neurons \(Alturki et al 2016\)](#).
- 631. [Distinct integration properties of noisy inputs in active dendritic subunits \(Poleg-Polsky 2019\)](#).
- 632. [Distributed cerebellar plasticity implements adaptable gain control \(Garrido et al., 2013\)](#).
- 633. [Distributed computing tool for NEURON, NEURONPM \(screensaver\) \(Calin-Jageman and Katz 2006\)](#).
- 634. [Distributed representation of perceptual categories in the auditory cortex \(Kim and Bao 2008\)](#).
- 635. [Distributed synaptic plasticity and spike timing \(Garrido et al. 2013\)](#).
- 636. [Distributed working memory in large-scale macaque brain model \(Mejias and Wang, 2022\)](#).
- 637. [Dopamine activation of signaling pathways in a medium spiny projection neuron \(Oliveira et al. 2012\)](#).
- 638. [Dopamine neuron of the vent. periaqu. gray and dors. raphe nucleus \(vIPAG/DRN\) \(Dougalis et al 2017\)](#).
- 639. [Dopamine-modulated medium spiny neuron, reduced model \(Humphries et al. 2009\)](#).
- 640. [Dopaminergic cell bursting model \(Kuznetsov et al 2006\)](#).
- 641. [Dopaminergic substantia nigra neuron \(Moubarak et al 2019\)](#).
- 642. [Dorsal Column Fiber Stimulation model \(Gilbert et al. 2022\)](#).
- 643. [Dorsal root ganglion \(DRG\) neuronal model \(Amir, Devor 2003\)](#).
- 644. [Dorsal root ganglion \(DRG\) neuronal model \(Kovalsky et al. 2009\)](#).
- 645. [Dorsal root ganglion \(primary somatosensory\) neurons \(Rho & Prescott 2012\)](#).
- 646. [Double boundary value problem \(A. Bose and J.E. Rubin, 2015\)](#).
- 647. [Double cable myelinated axon \(Layer 5 pyramidal neuron; Cohen et al 2020\)](#).
- 648. [DRG neuron models investigate how ion channel levels regulate firing properties \(Zheng et al 2019\)](#).
- 649. [DRG nociceptors from wild-type and Fhf2-KO mice. Fhf2 gene knockout blocks heat nociception. \(Marra et al., 2023\)](#).
- 650. [Drosophila 3rd instar larval aCC motoneuron \(Gunay et al. 2015\)](#).
- 651. [Drosophila circadian clock neurone model of essential tremor \(Smith et al 2018\)](#).
- 652. [Drosophila lateral ventral clock neuron \(LNV\) model \(Smith et al 2019\)](#).
- 653. [Drosophila projection neuron electrotonic structure \(Gouwens and Wilson 2009\)](#).
- 654. [Drosophila T4 neuron \(Gruntman et al 2018\)](#).
- 655. [DRt neuron model \(Sousa et al., 2014\)](#).
- 656. [Duration-tuned neurons from the inferior colliculus of the big brown bat \(Aubie et al. 2009\)](#).
- 657. [Duration-tuned neurons from the inferior colliculus of vertebrates \(Aubie et al. 2012\)](#).
- 658. [Dynamic cortical interlaminar interactions \(Carracedo et al. 2013\)](#).
- 659. [Dynamic dopamine modulation in the basal ganglia: Learning in Parkinson \(Frank et al 2004,2005\)](#).
- 660. [Dynamical assessment of ion channels during in vivo-like states \(Guet-McCreight & Skinner 2020\)](#).
- 661. [Dynamical model of olfactory bulb mitral cell \(Rubin, Cleland 2006\)](#).
- 662. [Dynamical patterns underlying response properties of cortical circuits \(Keane et al 2018\)](#).
- 663. [Dynamics in random NNs with multiple neuron subtypes \(Pena et al 2018, Tomov et al 2014, 2016\)](#).
- 664. [Dynamics of ERK signaling pathways during L-LTP induction \(Miningou et al 2021\)](#).



- 665. [Dynamics of ramping bursts in a respiratory pre-Botzinger Complex model \(Abdulla et al. 2021\)](#)
- 666. [Dynamics of sleep oscillations coupled to brain temperature on multiple scales \(Csernai et al 2019\)](#)
- 667. [Dynamics of Spike Initiation \(Prescott et al. 2008\)](#)
- 668. [DynaSim: a MATLAB toolbox for neural modeling and simulation \(Sherfey et al 2018\)](#)
- 669. [E-I balance modulates formation and dynamics of neuronal assemblies \(Sadeh and Clopath, 2021\)](#)
- 670. [E-I-E direction-selective motion discrimination visual cortex traveling waves \(Heitmann et al 2020\)](#)
- 671. [Early-onset epileptic encephalopathy \(Miceli et al. 2015\)](#)
- 672. [Earthworm medial giant fiber conduction velocity across electrical synapses \(Heller, Crisp 2016\)](#)
- 673. [Effect of circuit structure on odor representation in insect olfaction \(Rajagopalan & Assisi 2020\)](#)
- 674. [Effect of cortical D1 receptor sensitivity on working memory maintenance \(Reneaux & Gupta 2018\)](#)
- 675. [Effect of ionic diffusion on extracellular potentials \(Haines et al 2016\)](#)
- 676. [Effect of polysynaptic facilitation between piriform-hippocampal network stages \(Trieu et al 2015\)](#)
- 677. [Effect of riluzole on action potential in cultured human skeletal muscle cells \(Wang YJ et al. 2008\)](#)
- 678. [Effect of slowly inactivating IKdr to delayed firing of action potentials \(Wu et al. 2008\)](#)
- 679. [Effect of the initial synaptic state on the probability to induce LTP and LTD \(Migliore et al. 2015\)](#)
- 680. [Effect of trp-like current on APs during exposure to sinusoidal voltage \(Chen et al. 2010\)](#)
- 681. [Effect of voltage sensitive fluorescent proteins on neuronal excitability \(Akemann et al. 2009\)](#)
- 682. [Effects of Acetyl-L-carnitine on neural transmission \(Lombardo et al 2004\)](#)
- 683. [Effects of Chloride accumulation and diffusion on GABAergic transmission \(Jedlicka et al 2011\)](#)
- 684. [Effects of Dopamine Modulation and KIR Inactivation in NAc Medium Spiny Neurons \(Stephen 2011\)](#)
- 685. [Effects of electric fields on cognitive functions \(Migliore et al 2016\)](#)
- 686. [Effects of eugenol on the firing of action potentials in NG108-15 neurons \(Huang et al. 2011\)](#)
- 687. [Effects of Guanfacine and Phenylephrine on a model of working memory \(Duggins et al 2017\)](#)
- 688. [Effects of increasing CREB on storage and recall processes in a CA1 network \(Bianchi et al. 2014\)](#)
- 689. [Effects of KIR current inactivation in NAc Medium Spiny Neurons \(Stephen and Manchanda 2009\)](#)
- 690. [Effects of neural morphology on global and focal NMDA-spikes \(Poleg-Polsky 2015\)](#)
- 691. [Effects of spinal cord stimulation on WDR dorsal horn network \(Zhang et al 2014\)](#)
- 692. [Effects of synaptic location and timing on synaptic integration \(Rall 1964\)](#)
- 693. [Effects of the membrane AHP on the Lateral Superior Olive \(LSO\) \(Zhou & Colburn 2010\)](#)
- 694. [Effect of propofol on potassium current in cardiac H9c2 cells \(Liu et al. 2008\)](#)
- 695. [Efficient estimation of detailed single-neuron models \(Huys et al. 2006\)](#)
- 696. [Efficient Method for Computing Synaptic Conductance \(Destexhe et al 1994\)](#)
- 697. [Efficient simulation environment for modeling large-scale cortical processing \(Richert et al. 2011\)](#)
- 698. [Efficient simulation of 3D reaction-diffusion in models of neurons \(McDougal et al. 2022\)](#)
- 699. [Electrical activity of the suprachiasmatic nuclei \(Stinchcombe et al. 2017\)](#)
- 700. [Electrical compartmentalization in neurons \(Wybo et al 2019\)](#)
- 701. [Electrical properties of dendritic spines \(Popovic et al. 2015\)](#)

- 702. [Electrically-coupled Retzius neurons \(Vazquez et al. 2009\).](#)
- 703. [Electrodecrements in in vitro model of infantile spasms \(Traub et al 2020\).](#)
- 704. [Electrodiffusive astrocytic and extracellular ion concentration dynamics model \(Haines et al. 2013\).](#)
- 705. [Electrostimulation to reduce synaptic scaling driven progression of Alzheimers \(Rowan et al. 2014\).](#)
- 706. [Electrotonic transform and EPSCs for WT and Q175+/- spiny projection neurons \(Goodliffe et al 2018\).](#)
- 707. [Elementary mechanisms producing facilitation of Cav2.1 \(P/Q-type\) channels](#)
- 708. [eLIF and mAdExp: energy-based integrate-and-fire neurons \(Fardet and Levina 2020\).](#)
- 709. [ELL Medium Ganglion Cell \(Mormyrid fish\) \(Muller et al, 2023\).](#)
- 710. [ELL Medium Ganglion cell \(Muller et al 2019\).](#)
- 711. [ELL pyramidal neuron \(Simmonds and Chacron 2014\).](#)
- 712. [Emergence of Connectivity Motifs in Networks of Model Neurons \(Vasilaki, Giugliano 2014\).](#)
- 713. [Emergence of physiological oscillation frequencies in neocortex simulations \(Neymotin et al. 2011\).](#)
- 714. [Emergence of spatiotemporal sequences in spiking neuronal networks \(Spreizer et al 2019\).](#)
- 715. [Emergent properties of networks of biological signaling pathways \(Bhalla, Iyengar 1999\).](#)
- 716. [Encoding and discrimination of vowel-like sounds \(Tan and Carney 2005\).](#)
- 717. [Encoding and retrieval in a model of the hippocampal CA1 microcircuit \(Cutsuridis et al. 2009\).](#)
- 718. [Endocannabinoid dynamics gate spike-timing dependent depression and potentiation \(Cui et al 2016\).](#)
- 719. [Endothelin action on pituitary latotrophs \(Bertram et al. 2006\).](#)
- 720. [Energy-efficient information transfer at thalamocortical synapses \(Harris et al 2019\).](#)
- 721. [Engaging distinct oscillatory neocortical circuits \(Vierling-Claassen et al. 2010\).](#)
- 722. [Enhanced Excitability in Hermisenda: modulation by 5-HT \(Cai et al 2003\).](#)
- 723. [Enhancing the HH eqs: simulations based on the first publication in Biophys J \(Moore 2015\).](#)
- 724. [Entrainment and divisive inhibition in a neocortical neural mass model \(Papasavvas et al 2020\).](#)
- 725. [Ephaptic coupling in passive cable and MSO neuron models \(Goldwyn & Rinzel 2016\).](#)
- 726. [Ephaptic interactions in olfactory nerve \(Bokil et al 2001\).](#)
- 727. [Epilepsy may be caused by very small functional changes in ion channels \(Thomas et al. 2009\).](#)
- 728. [Epileptic seizure model with Morris-Lecar neurons \(Beverlin and Netoff 2011\).](#)
- 729. [Equivalent excitability achieved via different Nav subtypes \(Xie et al., 2024\).](#)
- 730. [ERG current in repolarizing plateau potentials in dopamine neurons \(Canavier et al 2007\).](#)
- 731. [Escape response latency in the Giant Fiber System of Drosophila melanogaster \(Augustin et al 2019\).](#)
- 732. [Estimating the effects of slicing on the electrophysiological properties of spinal motoneurons under normal and disease conditions \(Mousa and Elbasiouny 2021\).](#)
- 733. [Estimation and Production of Time Intervals \(Migliore et al 2001\).](#)
- 734. [Estimation of conductance in a conductance-based model of quadratic type \(Vich & Guillemon 2015\).](#)
- 735. [Evaluation of passive component of propagating AP in mossy fiber axons \(Ohura & Kamiya 2018\).](#)
- 736. [Evaluation of stochastic diff. eq. approximation of ion channel gating models \(Bruce 2009\).](#)
- 737. [Event-related simulation of neural processing in complex visual scenes \(Mihalas et al. 2011\).](#)
- 738. [Evolving simple models of diverse dynamics in hippocampal neuron types \(Venkadesh et al 2018\).](#)

739. [Exact mean-field models for Izhikevich networks \(Chen and Campbell 2022\)](#).
740. [Excessive beta oscillations in Parkinson's disease \(Pavlidis et al. 2015\)](#).
741. [Excitability of DA neurons and their regulation by synaptic input \(Morozova et al. 2016a, 2016b\)](#).
742. [Excitability of PFC Basal Dendrites \(Acker and Antic 2009\)](#).
743. [Excitability of the soma in central nervous system neurons \(Safronov et al 2000\)](#).
744. [Excitation Properties of Computational Models of Unmyelinated Peripheral Axons \(Pelot et al., 2021\)](#).
745. [Excitation-contraction coupling in an integrative heart cell model \(Greenstein et al 2006\)](#).
746. [Excitation-contraction coupling/mitochondrial energetics \(ECME\) model \(Cortassa et al. 2006\)](#).
747. [Excitatory and inhibitory interactions in populations of model neurons \(Wilson and Cowan 1972\)](#).
748. [Excitatory and inhibitory population activity \(Bittner et al 2017\) \(Litwin-Kumar & Doiron 2017\)](#).
749. [Excitatory synaptic interactions in pyramidal neuron dendrites \(Behabadi et al. 2012\)](#).
750. [Excitotoxic loss of dopaminergic cells in PD \(Muddapu et al 2019\)](#).
751. [Experimental and modeling studies of desensitization of P2X3 receptors \(Sokolova et al. 2006\)](#).
752. [Explainable AI for spatial navigation based on hippocampal circuitry \(Coppolino + Migliore 2023\)](#).
753. [Explaining pathological changes in axonal excitability by dynamical analysis \(Coggan et al. 2011\)](#).
754. [Exploring the role of Kölliker-Fuse nucleus in breathing variability via mathematical modeling \(John et al., 2023\)](#).
755. [External Tufted Cell Model \(Ryan Viertel, Alla Borisjuk 2019\)](#).
756. [Extracellular Action Potential Simulations \(Gold et al 2007\)](#).
757. [Extracellular fields for a three-dimensional network of cells using NEURON \(Appukuttan et al 2017\)](#).
758. [Extracellular stimulation of myelinated axon \(Reilly 2016\)](#).
759. [Extraction and classification of three cortical neuron types \(Mensi et al. 2012\)](#).
760. [Facilitation by residual calcium \(Stockbridge, Hines 1982\)](#).
761. [Facilitation model based on bound  \$\text{Ca}^{2+}\$  \(Matveev et al. 2006\)](#).
762. [Facilitation through buffer saturation \(Matveev et al. 2004\)](#).
763. [Factors contribution to GDP-induced  \$\[\text{Cl}^-\]\_i\$  transients \(Lombardi et al 2019\)](#).
764. [Failure of Deep Brain Stimulation in a basal ganglia neuronal network model \(Dovzhenok et al. 2013\)](#).
765. [Fast AMPA receptor signaling \(Geiger et al 1997\)](#).
766. [Fast convergence of cerebellar learning \(Luque et al. 2015\)](#).
767. [Fast global oscillations in networks of I&F neurons with low firing rates \(Brunel and Hakim 1999\)](#).
768. [Fast oscillations in inhibitory networks \(Maex, De Schutter 2003\)](#).
769. [Fast population coding \(Huys et al. 2007\)](#).
770. [Fast sodium channel gating in mossy fiber axons \(Schmidt-Hieber et al. 2010\)](#).
771. [Fast Spiking Basket cells \(Tzilivaki et al 2019\)](#).
772. [Fast-spiking cortical interneuron \(Golomb et al. 2007\)](#).
773. [Feature integration drives probabilistic behavior in Fly escape response \(von Reyn et al 2017\)](#).
774. [Febrile seizure-induced modifications to  \$I\_h\$  \(Chen et al 2001\)](#).
775. [Feedforward heteroassociative network with HH dynamics \(Lytton 1998\)](#).

776. [Feedforward inhibition in pyramidal cells \(Ferrante & Ascoli 2015\)](#)
777. [Feedforward network undergoing Up-state-mediated plasticity \(Gonzalez-Rueda et al. 2018\)](#)
778. [ffian: Fluid Flow In Astrocyte Networks \(Sætra et al. 2023\)](#)
779. [FFV1MT: A V1-MT feedforward architecture for optical flow estimation \(Solari et al., 2015\)](#)
780. [FHF2KO and Wild-Type Mouse Cardiomyocyte Strands \(Park et al 2020\)](#)
781. [Firing neocortical layer V pyramidal neuron \(Reetz et al. 2014; Stadler et al. 2014\)](#)
782. [Firing patterns in stuttering fast-spiking interneurons \(Klaus et al. 2011\)](#)
783. [Firing patterns of CA3 hippocampal neurons \(Soldado-Magraner et al. 2019\)](#)
784. [First-Spike-Based Visual Categorization Using Reward-Modulated STDP \(Mozafari et al. 2018\)](#)
785. [Fisher and Shannon information in finite neural populations \(Yarrow et al. 2012\)](#)
786. [Fitting predictive coding to the neurophysiological data \(Spratling 2019\)](#)
787. [Fixed point attractor \(Hasselmo et al 1995\)](#)
788. [Fluctuating synaptic conductances recreate in-vivo-like activity \(Destexhe et al 2001\)](#)
789. [Fly lobular plate VS cell \(Borst and Haag 1996, et al. 1997, et al. 1999\)](#)
790. [FNS spiking neural simulator; LIFL neuron model, event-driven simulation \(Susi et al 2021\)](#)
791. [Formation of synfire chains \(Jun and Jin 2007\)](#)
792. [Four cortical interneuron subtypes \(Kubota et al. 2011\)](#)
793. [Four-pathway phenomenological synaptic plasticity model \(Ebner et al. 2019\)](#)
794. [Fractional leaky integrate-and-fire model \(Teka et al. 2014\)](#)
795. [FRAT: An amygdala-centered model of fear conditioning \(Krasne et al. 2011\)](#)
796. [Frequency-dependent pattern separation in a biophysical model of the dentate gyrus \(Singh et al., 2023\)](#)
797. [Frog second-order vestibular neuron models \(Rossert et al. 2011\)](#)
798. [Fronto-parietal visuospatial WM model with HH cells \(Edin et al 2007\)](#)
799. [FS Striatal interneuron: K currents solve signal-to-noise problems \(Kotaleski et al 2006\)](#)
800. [Fully continuous Pinsky-Rinzel model for bifurcation analysis \(Atherton et al. 2016\)](#)
801. [Fully Implicit Parallel Simulation of Single Neurons \(Hines et al. 2008\)](#)
802. [Fully-Asynchronous Cache-Efficient Simulation of Detailed Neural Networks \(Magalhaes et al 2019\)](#)
803. [Function and energy constrain neuronal biophysics in coincidence detection \(Remme et al 2018\)](#)
804. [Functional balanced networks with synaptic plasticity \(Sadeh et al, 2015\)](#)
805. [Functional consequences of cortical circuit abnormalities on gamma in schizophrenia \(Spencer 2009\)](#)
806. [Functional impact of dendritic branch point morphology \(Ferrante et al., 2013\)](#)
807. [Functional properties of dendritic gap junctions in Cerebellar Golgi cells \(Szoboszlai et al. 2016\)](#)
808. [Functional structure of mitral cell dendritic tuft \(Djurisic et al. 2008\)](#)
809. [Gamma and theta rhythms in biophysical models of hippocampus circuits \(Kopell et al. 2011\)](#)
810. [Gamma genesis in the basolateral amygdala \(Feng et al 2019\)](#)
811. [Gamma oscillations in hippocampal interneuron networks \(Bartos et al 2002\)](#)
812. [Gamma oscillations in hippocampal interneuron networks \(Wang, Buzsaki 1996\)](#)

813. [Gamma-beta alternation in the olfactory bulb](#) (David, Fourcaud-Trocmé et al., 2015).
814. [Gap junction coupled network of striatal fast spiking interneurons](#) (Hjorth et al. 2009).
815. [Gap junction plasticity as a mechanism to regulate network-wide oscillations](#) (Pernelle et al 2018).
816. [Gap junction subtypes](#) (Appukuttan et al 2016).
817. [Gap-junction coupled network activity depends on coupled dendrites diameter](#) (Gansert et al. 2007).
818. [Gating of steering signals through phasic modulation of reticulospinal neurons](#) (Kozlov et al. 2014).
819. [GC model](#) (Beining et al 2017).
820. [Generalized Carnevale-Hines algorithm](#) (van Elburg and van Ooyen 2009).
821. [Generating coherent patterns of activity from chaotic neural networks](#) (Sussillo and Abbott 2009).
822. [Generating neuron geometries for detailed 3D simulations using AnaMorph](#) (Morschel et al 2017).
823. [Generating oscillatory bursts from a network of regular spiking neurons](#) (Shao et al. 2009).
824. [Generation of granule cell dendritic morphology](#) (Schneider et al. 2014).
825. [Generation of stable heading representations in diverse visual scenes](#) (Kim et al 2019).
826. [Generic Bi-directional Real-time Neural Interface](#) (Zrenner et al. 2010).
827. [Genetic, biochemical and bioelectrical dynamics in pattern regulation](#) (Pietak & Levin 2017).
828. [Geometry-induced features of current transfer in neuronal dendrites](#) (Korogod, Kulagina 1998).
829. [Glial voltage dynamics driven by Kir & K2P currents](#) (Janjic et al 2023).
830. [GLMCC validation neural network model](#) (Kobayashi et al. 2019).
831. [Global and multiplexed dendritic computations under in vivo-like conditions](#) (Ujfalussy et al 2018).
832. [Global structure, robustness, and modulation of neuronal models](#) (Goldman et al. 2001).
833. [Globus pallidus multi-compartmental model neuron with realistic morphology](#) (Gunay et al. 2008).
834. [Globus pallidus neuron models with differing dendritic Na channel expression](#) (Edgerton et al., 2010).
835. [Glutamate diffusion and AMPA receptor activation in the cerebellar glomerulus](#) (Saftenku 2005).
836. [Glutamate mediated dendritic and somatic plateau potentials in cortical L5 pyr cells](#) (Gao et al '20).
837. [Glutamate spillover and plateau potentials](#) (Trpevski et al., 2023).
838. [Glutamate-evoked Ca<sup>2+</sup> oscillations in single astrocytes](#) (De Pitta et al. 2009) (Manninen et al 2017).
839. [Glutamate-evoked Ca<sup>2+</sup> oscillations in single astrocytes](#) (Modified from Dupont et al. 2011).
840. [Goldfish Mauthner cell](#) (Medan et al 2017).
841. [GP Neuron, somatic and dendritic phase response curves](#) (Schultheiss et al. 2011).
842. [GPi/GPe neuron models](#) (Johnson and McIntyre 2008).
843. [Gq coupled signaling pathways involved in striatal synaptic plasticity](#) (Kim et al. 2013).
844. [Granule Cells of the Olfactory Bulb](#) (Simoes\_De\_Souza et al. 2014).
845. [Graph-theoretical Derivation of Brain Structural Connectivity](#) (Giacopelli et al 2020).
846. [Grid cell model with compression effects](#) (Raudies & Hasselmo, 2015).
847. [Grid cell oscillatory interference with noisy network oscillators](#) (Zilli and Hasselmo 2010).
848. [Grid cell spatial firing models](#) (Zilli 2012).
849. [Grid cell-to-place cell transformation model w AD-related synaptic loss](#) (Ness and Schultz 2021).



850. [Grid cells from place cells \(Castro & Aguiar, 2014\).](#)
851. [Growth Rules for Repair of Asynch Irregular Networks after Peripheral Lesions \(Sinha et al 2021\)](#)
852. [H-currents effect on the fluctuation of gamma/beta oscillations \(Avella-Gonzalez et al., 2015\)](#)
853. [Half-center oscillator database of leech heart interneuron model \(Doloc-Mihu & Calabrese 2011\)](#)
854. [Healthy and Epileptic Hippocampal Circuit \(Aussel et al 2022\)](#)
855. [Hebbian learning in a random network for PFC modeling \(Lindsay, et al. 2017\).](#)
856. [Hebbian STDP for modelling the emergence of disparity selectivity \(Chauhan et al 2018\)](#)
857. [HERG K+ channels spike-frequency adaptation \(Chiesa et al 1997\).](#)
858. [Heterogeneous axon model \(Zang et al, accepted\).](#)
859. [Heterogeneous Purkinje Cell model \(Cirtala et al., accepted\).](#)
860. [Heterosynaptic Spike-Timing-Dependent Plasticity \(Hiratani & Fukai 2017\)](#)
861. [HH model neuron of the Suprachiasmatic Nucleus including a persistent Na+ channel \(Paul et al 2016\)](#)
862. [HH model of SCN neurons including a transient K+ channel \(Bano-Otalora et al 2021\)](#)
863. [HH-type model of fast-spiking parvalbumin interneurons in spinal dorsal horn \(Ma et al, 2023\)](#)
864. [Hierarchical anti-Hebbian network model for the formation of spatial cells in 3D \(Soman et al 2019\)](#)
865. [Hierarchical Gaussian Filter \(HGF\) model of conditioned hallucinations task \(Powers et al 2017\)](#)
866. [Hierarchical network model of perceptual decision making \(Wimmer et al 2015\)](#)
867. [High dimensional dynamics and low dimensional readouts in neural microcircuits \(Haeusler et al 2006\)](#)
868. [High entrainment constrains synaptic depression in a globular bushy cell \(Rudnicki & Hemmert 2017\)](#)
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931. [I<sub>h</sub> levels roles in bursting and regular-spiking subiculum pyramidal neurons \(van Welie et al 2006\)](#).
932. [I<sub>h</sub> tunes oscillations in an In Silico CA3 model \(Neymotin et al. 2013\)](#).
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1002. [L2/3 V1 Pyramidal Cell model \(modified Park et al., 2019; a/n: 231185\)\\_\(Petousakis et al., 2023\)](#)
1003. [L4 cortical barrel NN model receiving thalamic input during whisking or touch \(Gutnisky et al. 2017\)](#)
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