\mathbf{Model}	None	LIF	AdExp	eLIF	mAdExp	НН	HH+Ca	
Runtime (s)	0.75	0.8	2.7	2.86 (1.79)	3.52(2.56)	3.47	4.92	
Runtime of var	rious me	odels ir	NEST.	A "baseline"	run with no	neuron	(None), co	mpared t
							. , ,	
and mAdExp),	two rui	ns were	performe	ed: one using	a naive imple	mentat	ion and and	other using
slightly optimi	zed imp	lement	ation (nu	mbers in pare	entheses). Co	nducta	ance-based i	models ar
also included:	a stand	ard Ho	dgkin-Hu	ıxley (HH) me	odel which ca	n displ	lay regular	spiking a
depolarization	block, aı	nd one	with calci	um and calciu	ım-gated pota	ssium (HH+Ca) to	reproduc
*	,						,	•
	Runtime (s) Runtime of various with one is and mAdExp), slightly optimicalso included: depolarization	Runtime (s) 0.75 Runtime of various more runs with one neuron of and mAdExp), two runs slightly optimized impalso included: a stand	Runtime (s) 0.75 0.8 Runtime of various models in runs with one neuron of each and mAdExp), two runs were slightly optimized implement also included: a standard Hodepolarization block, and one	Runtime (s) 0.75 0.8 2.7 Runtime of various models in NEST. runs with one neuron of each of the me and mAdExp), two runs were performed slightly optimized implementation (number of the standard Hodgkin-Hudepolarization block, and one with calciliation of the standard Hodgkin-Hudepolarization block, and one with calciliation blocks.	Runtime (s) 0.75 0.8 2.7 2.86 (1.79) Runtime of various models in NEST. A "baseline" runs with one neuron of each of the mentioned model and mAdExp), two runs were performed: one using slightly optimized implementation (numbers in paralso included: a standard Hodgkin-Huxley (HH) medepolarization block, and one with calcium and calcium	Runtime (s) 0.75 0.8 2.7 2.86 (1.79) 3.52 (2.56) Runtime of various models in NEST. A "baseline" run with no runs with one neuron of each of the mentioned models. For the neuron and mAdExp), two runs were performed: one using a naive implesslightly optimized implementation (numbers in parentheses). Coalso included: a standard Hodgkin-Huxley (HH) model which cadepolarization block, and one with calcium and calcium-gated potation.	Runtime (s) 0.75 0.8 2.7 2.86 (1.79) 3.52 (2.56) 3.47 Runtime of various models in NEST. A "baseline" run with no neuron runs with one neuron of each of the mentioned models. For the new energy and mAdExp), two runs were performed: one using a naive implementated slightly optimized implementation (numbers in parentheses). Conducted also included: a standard Hodgkin-Huxley (HH) model which can disperfect depolarization block, and one with calcium and calcium-gated potassium (standard potassium).	Runtime (s) 0.75 0.8 2.7 2.86 (1.79) 3.52 (2.56) 3.47 4.92 Runtime of various models in NEST. A "baseline" run with no neuron (None), coruns with one neuron of each of the mentioned models. For the new energy-based model and mAdExp), two runs were performed: one using a naive implementation and and slightly optimized implementation (numbers in parentheses). Conductance-based ralso included: a standard Hodgkin-Huxley (HH) model which can display regular depolarization block, and one with calcium and calcium-gated potassium (HH+Ca) to