Investigation for

[1] Default

* Sigmoidal increase and exponential decrease
* Long tail

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| Peak: 22.243544 | Peak time: 62.966875 | Tau: 1265.475774 | a\_peam: 0.997964 |  i\_peak: 0.987284 | ass=0.9999 | iss=5.5785e-8 | tau\_a=2.0792 | tau\_i=1200 | |
|  | A screenshot of a cell phone  Description automatically generated |
| A screenshot of a cell phone  Description automatically generated | A close up of a map  Description automatically generated |

[2] Decrease ass

* Only ass decreased without affecting the others, because tau\_a is independent from ass. On the other hand, if we want to make the steady-state value of ato decrease for Ito, it affects tau\_a
* aKslow hits ass slower than the default, but the difference is so small (tau\_a is small)

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| ass=0.5  Peak: 11.122667 | Peak time: 62.985807 | Tau: 1265.717384 | ass: 0.499030 | iss: 0.987268  A screenshot of a cell phone  Description automatically generated |

[3] Decrease tau\_a

* Small tau\_a make the trace hits the peak earlier (peak time 62.97 ms -> 50.77 ms), but it does not change the rest of parts very much

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| --- | --- |
| Peak: 22.513422 | Tau: 1251.205710 | Peak time: 50.773042| a\_peak: 0.999861 | i\_peak: 0.997367 | ass: 0.999919 | iss: 0.000000 | tau\_a: 0.079232 | tau\_i: 1199.999991 | |
|  | A screenshot of a cell phone  Description automatically generated |

[3] Increase iss

* Tau increased more than x2 compared to the default model
  + Hypothesis: Tau is more sensitive to iss than ass
* The peak and peak time are almost same with the default model

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| Iss=0.30109  Peak: 22.333523 | Peak time: 64.131870 | Tau: 2937.475774 | ass: 0.998802 | iss: 0.990446  A screenshot of a cell phone  Description automatically generated |

[4-1] Increase tau\_i

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| tau\_i=5000  Peak: 22.456387 | Peak time: 66.461859 | Tau: 5068.475774 | ass: 0.999554 | iss: 0.995145  A screenshot of a cell phone  Description automatically generated |

[4-1] Increase tau\_i

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| tau\_i=500000  Peak: 22.539988 | Peak time: 75.475774 | Tau: 10000.000000 | ass: 0.999914 | iss: 0.998491  A screenshot of a cell phone  Description automatically generated |

[5] Decrease tau\_i

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| tau\_i=500  Peak: 21.906725 | Peak time: 61.582086 | Tau: 563.475774 | ass: 0.996115 | iss: 0.974139  A screenshot of a cell phone  Description automatically generated |