

Truth simulation data used: `data_matrix_4/
smbt11950smbtf2300smb00.324smb10.162smbf0sillmin415
sillmax425sillslope0.01hnd2.18lnd4.44bx-0.001.csv`

Below is the data gathered from simulating the convergence of our output using the two-stage ice sheet model and the truth simulation above and assimilating data based on 'observations' over 350 years (from 1950 to 2300) with varying time intervals between 'observations'.

The Data in the following Table is given in up to 7 significant digits:

Label	# of Observations	Mean of Covariance Norms (CNs)	Variance of CNs	Minimum Maximum
Every 3 months	1400			0.0073922
1.04e-05		0.0014523		0.026898
Every 6 months	700			0.0071205
1.01e-05		0.0015455		0.0231747
Yearly	350			0.0081216
9.3e-06		0.0019141		0.020219
Every 2 years	175			0.0071475
9e-06		0.0012133		0.0186514
Every 4 years	88			0.0065967
1.07e-05		0.0011107		0.016873
Every 8 years	44			0.0072841
1.45e-05		0.0012351		0.0209728
Every 16 years	22			0.0073536
1.7e-05		0.0029061		0.0212402

We see that for this example, our results get

closest to the truth simulations when assimilating observations once every 2 years.

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Number of observations since 1950: 1400
Mean of covariance norms: 0.0073922
Variance of covariance norms: 1.04e-05
minimum: 0.0014523
maximum: 0.026898 – note: all rounded to 7 significant digits

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Number of observations since 1950: 700
Mean of covariance norms: 0.0071205
Variance of covariance norms: 1.01e-05
minimum: 0.0015455
maximum: 0.0231747 – note: all rounded to 7 significant digits

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Number of observations since 1950: 350
Mean of covariance norms: 0.0081216
Variance of covariance norms: 9.3e-06
minimum: 0.0019141
maximum: 0.020219 – note: all rounded to 7 significant digits

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Number of observations since 1950: 175
Mean of covariance norms: 0.0071475
Variance of covariance norms: 9e-06
minimum: 0.0012133

maximum: 0.0186514 - note: all rounded to 7
significant digits

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Number of observations since 1950: 88
Mean of covariance norms: 0.0065967
Variance of covariance norms: 1.07e-05
minimum: 0.0011107
maximum: 0.016873 - note: all rounded to 7
significant digits

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Number of observations since 1950: 44
Mean of covariance norms: 0.0072841
Variance of covariance norms: 1.45e-05
minimum: 0.0012351
maximum: 0.0209728 - note: all rounded to 7
significant digits

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Number of observations since 1950: 22
Mean of covariance norms: 0.0073536
Variance of covariance norms: 1.7e-05
minimum: 0.0029061
maximum: 0.0212402 - note: all rounded to 7
significant digits