Prior Estimates of CH4 Emissions Inventories

CALGEM Subcategory 0.1° x 0.1°	Total Flux Prior $TgCH_4/yr$	Flux Prior CV $TgCH_4/yr$	Flux Prior SCB $TgCH_4/yr$	Fraction SoCAB
EDGAR 4.2 Energy manufacturing transformation	0.020	0.010	0.010	51%
EDGAR 4.2 Non-road transportation	0.000	0.000	0.000	30%
EDGAR 4.2 Road transportation	0.014	0.007	0.008	54%
EDGAR 4.2 Residential	0.026	0.018	0.007	29%
EDGAR 4.2 Fugitive from Solid	0.000	0.000	0.000	0%
EDGAR 4.2 Oil production and refineries	0.026	0.015	0.011	44%
EDGAR 4.2 Gas production and distribution	0.483	0.255	0.228	47%
EDGAR 4.2 Industrial process and product use	0.005	0.002	0.003	58%
EDGAR 4.2 Enteric Fermentation	0.345	0.338	0.007	2%
EDGAR 4.2 Manure management	0.112	0.108	0.004	3%
EDGAR 4.2 Agricultural soils	0.032	0.032	0.000	0%
EDGAR 4.2 Agricultural waste burning	0.001	0.001	0.000	2%
EDGAR 4.2 Large scale biomass burning	0.001	0.001	0.000	4%
EDGAR 4.2 Solid waste disposal	0.601	0.327	0.274	46%
EDGAR 4.2 Waste water	0.153	0.068	0.085	55%
EDGAR 4.2 Fossil Fuel Fires	0.000	0.000	0.000	0%
Totals	**1.819**	**1.182**	**0.636**	**35%**

	CV	SoCAB	Fraction SoCAB
Effective Scaling NOAA B.C. (unitless scaling)	2.118	0.557	
Effective Scaling GEOS-Chem B.C. (unitless scaling)	1.932	0.567	
Posterior Total NOAA B.C.(TgCH4/yr)	**2.505**	**0.355**	12%
Posterior Total GEOS-Chem B.C. (TgCH4/yr)	**2.285**	**0.361**	14%

Total CA Budget (NOAA B.C.)	**2.860 ± 0.369**	**$TgCH_4/yr$**
Total CA Budget (GEOS-Chem B.C.)	**2.646 ± 0.313**	**$TgCH_4/yr$**

EDGAR 4.2 CV Inversion

Optimized Independently	Colinearity Factor	Scaling NOAA B.C.	Fluxes A $TgCH_4/yr$	Scaling A GEOS-Chem B.C.	Fluxes A $TgCH_4/yr$
B	1.04	0.98	0.010	0.65	0.007
B	1.04	0.98	0.000	0.65	0.000
B	1.04	0.98	0.006	0.65	0.004
B	1.04	0.98	0.018	0.65	0.012
B	1.04	0.98	0.000	0.65	0.000
B	1.04	0.98	0.014	0.65	0.009
B	1.04	0.98	0.249	0.65	0.166
B	1.04	0.98	0.002	0.65	0.001
A	1.04	4.00	1.353	4.05	1.369
A	1.04	4.00	0.433	4.05	0.438
B	1.04	0.98	0.032	0.65	0.021
B	1.04	0.98	0.001	0.65	0.001
B	1.04	0.98	0.001	0.65	0.000
B	1.04	0.98	0.319	0.65	0.212
B	1.04	0.98	0.067	0.65	0.044
B	1.04	0.98	0.000	0.65	0.000
		Prior Total	1.182		1.182
		INVERSION TOTAL	2.505		2.285

Scaling Factors		mean	sd	mean	sd
Cows/Manure	A	4.004	0.086	4.050	0.076
Oil/Gas/Waste/Rest	B	0.976	0.035	0.649	0.029

Fluxes	Prior	Posterior - NOAA	CI = 2 sigma	Posterior GC	CI
Cows/Manure	0.446	1.786	0.309	1.807	0.275
Oil/Gas/Waste/Rest	0.736	0.719	0.050	0.478	0.028
Total	1.182	2.505	0.359	2.285	0.303

EDGAR 4.2 SoCAB Inversion

Optimized Independently	Colinearity Factor	Scaling NOAA B.C.	Fluxes A $TgCH_4/yr$	Scaling A GEOS-Chem B.C.	Fluxes A $TgCH_4/yr$
B	1.32	0.50	0.005	0.51	0.005
B	1.32	0.50	0.000	0.51	0.000
B	1.32	0.50	0.004	0.51	0.004
B	1.32	0.50	0.004	0.51	0.004
B	1.32	0.50	0.000	0.51	0.000
B	1.32	0.50	0.006	0.51	0.006
B	1.32	0.50	0.114	0.51	0.116
B	1.32	0.50	0.001	0.51	0.001
A	1.32	3.85	0.027	3.92	0.028
A	1.32	3.85	0.014	3.92	0.014
B	1.32	0.50	0.000	0.51	0.000
B	1.32	0.50	0.000	0.51	0.000
B	1.32	0.50	0.000	0.51	0.000
B	1.32	0.50	0.137	0.51	0.140
B	1.32	0.50	0.042	0.51	0.043
B	1.32	0.50	0.000	0.51	0.000
		Prior Total	0.636		0.636
		INVERSION TOTAL	0.355		0.361

Scaling Factors		mean	sd	mean	sd
Cows/Manure	A	3.846	0.079	3.921	0.077
Oil/Gas/Waste/Rest	B	0.502	0.006	0.511	0.006

Fluxes	Prior	Posterior - NOAA	CI = 2 sigma	Posterior GC	CI
Cows/Manure	0.011	0.041	0.006	0.041	0.006
Oil/Gas/Waste/Rest	0.626	0.314	0.004	0.320	0.004
Total	0.636	0.355	0.010	0.361	0.010