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Supplement of

**High variability of particulate organic carbon export along
the North Atlantic GEOTRACES section GA01
as deduced from ^{234}Th fluxes**

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Table S1: ^{238}U and total ^{234}Th activities in dpm L^{-1} and resulting $^{234}\text{Th}/^{238}\text{U}$ ratios. ^{238}U activity is derived from salinity (see text).

| Station # | Depth m | Temperature °C | Salinity psu | ^{238}U dpm.L^{-1} | ^{234}Th dpm.L^{-1} | $^{234}\text{Th}/^{238}\text{U}$ |
|--|---------|----------------|--------------|--------------------------------------|---------------------------------------|----------------------------------|
| #1 40.3°N / -10.0 °E 20/05/2014 | 19 | 15.89 | 35.27 | 2.46 ± 0.05 | 1.83 ± 0.06 | 0.74 |
| | 39 | 14.93 | 35.55 | 2.48 ± 0.05 | 1.69 ± 0.05 | 0.68 |
| | 60 | 13.81 | 35.68 | 2.49 ± 0.05 | 2.11 ± 0.07 | 0.85 |
| | 79 | 13.44 | 35.71 | 2.49 ± 0.05 | 2.39 ± 0.07 | 0.96 |
| | 98 | 13.21 | 35.74 | 2.49 ± 0.05 | 2.55 ± 0.08 | 1.02 |
| | 119 | 13.02 | 35.73 | 2.49 ± 0.05 | 2.50 ± 0.08 | 1.00 |
| | 137 | 12.88 | 35.73 | 2.49 ± 0.05 | 2.34 ± 0.07 | 0.94 |
| | 158 | 12.73 | 35.71 | 2.49 ± 0.05 | 2.44 ± 0.08 | 0.98 |
| | 199 | 12.55 | 35.71 | 2.49 ± 0.05 | 2.54 ± 0.08 | 1.02 |
| | 246 | 12.29 | 35.69 | 2.49 ± 0.05 | 2.60 ± 0.08 | 1.05 |
| | 298 | 12.08 | 35.68 | 2.49 ± 0.05 | 2.67 ± 0.08 | 1.07 |
| | 396 | 11.69 | 35.65 | 2.49 ± 0.05 | 2.59 ± 0.08 | 1.04 |
| | 496 | 11.43 | 35.67 | 2.49 ± 0.05 | 2.43 ± 0.07 | 0.98 |
| | 589 | 11.41 | 35.77 | 2.50 ± 0.05 | 2.61 ± 0.08 | 1.05 |
| | 695 | 11.60 | 35.94 | 2.51 ± 0.05 | 2.58 ± 0.08 | 1.03 |
| | 791 | 11.72 | 36.07 | 2.52 ± 0.05 | 2.90 ± 0.09 | 1.15 |
| 989 | 11.34 | 36.15 | 2.53 ± 0.05 | 2.68 ± 0.08 | 1.06 | |
| #13 41.4°N / -13.9 °E 25/05/2014 | 20 | 15.49 | 35.85 | 2.50 ± 0.05 | 1.75 ± 0.05 | 0.70 |
| | 40 | 14.86 | 35.81 | 2.50 ± 0.05 | 1.83 ± 0.05 | 0.73 |
| | 60 | 13.30 | 35.76 | 2.50 ± 0.05 | 2.23 ± 0.07 | 0.90 |
| | 78 | 13.14 | 35.76 | 2.50 ± 0.05 | 2.31 ± 0.06 | 0.93 |
| | 99 | 12.99 | 35.75 | 2.49 ± 0.05 | 2.26 ± 0.07 | 0.91 |
| | 119 | 12.93 | 35.75 | 2.49 ± 0.05 | 2.63 ± 0.08 | 1.05 |
| | 139 | 12.88 | 35.75 | 2.49 ± 0.05 | 2.82 ± 0.07 | 1.13 |
| | 159 | 12.83 | 35.74 | 2.49 ± 0.05 | 2.64 ± 0.07 | 1.06 |
| | 197 | 12.64 | 35.71 | 2.49 ± 0.05 | 2.52 ± 0.07 | 1.01 |
| | 248 | 12.38 | 35.68 | 2.49 ± 0.05 | 2.65 ± 0.07 | 1.06 |
| | 298 | 12.20 | 35.66 | 2.49 ± 0.05 | 2.50 ± 0.07 | 1.00 |
| | 398 | 11.82 | 35.62 | 2.48 ± 0.05 | 2.52 ± 0.07 | 1.01 |
| | 496 | 11.59 | 35.62 | 2.48 ± 0.05 | 2.66 ± 0.08 | 1.07 |
| | 594 | 11.23 | 35.61 | 2.48 ± 0.05 | 2.61 ± 0.07 | 1.05 |
| | 693 | 10.66 | 35.57 | 2.48 ± 0.05 | 2.55 ± 0.08 | 1.03 |
| | 792 | 10.55 | 35.68 | 2.49 ± 0.05 | 2.35 ± 0.06 | 0.95 |
| 990 | 9.33 | 35.65 | 2.49 ± 0.05 | 2.63 ± 0.08 | 1.06 | |
| 1485 | 6.73 | 35.45 | 2.47 ± 0.05 | 2.48 ± 0.07 | 1.00 | |

| Station # | Depth m | Temperature °C | Salinity psu | ²³⁸ U dpm.L ⁻¹ | | ²³⁴ Th dpm.L ⁻¹ | | ²³⁴ Th/ ²³⁸ U |
|---------------------------------------|---------|----------------|--------------|--------------------------------------|--------|---------------------------------------|--------|-------------------------------------|
| #21 46.5°N / -19.7°E 31/05/2014 | 10 | 14.44 | 35.68 | 2.49 | ± 0.05 | 1.41 | ± 0.05 | 0.57 |
| | 20 | 13.65 | 35.66 | 2.49 | ± 0.05 | 1.69 | ± 0.05 | 0.68 |
| | 39 | 12.79 | 35.64 | 2.49 | ± 0.05 | 1.79 | ± 0.05 | 0.72 |
| | 59 | 12.71 | 35.65 | 2.49 | ± 0.05 | 1.80 | ± 0.05 | 0.72 |
| | 76 | 12.63 | 35.67 | 2.49 | ± 0.05 | 2.07 | ± 0.06 | 0.83 |
| | 100 | 12.45 | 35.69 | 2.49 | ± 0.05 | 2.36 | ± 0.07 | 0.95 |
| | 119 | 12.36 | 35.68 | 2.49 | ± 0.05 | 2.62 | ± 0.07 | 1.05 |
| | 158 | 12.23 | 35.66 | 2.49 | ± 0.05 | 2.53 | ± 0.07 | 1.02 |
| | 198 | 12.08 | 35.64 | 2.49 | ± 0.05 | 2.70 | ± 0.07 | 1.09 |
| | 296 | 11.80 | 35.60 | 2.48 | ± 0.05 | 2.83 | ± 0.07 | 1.14 |
| | 396 | 11.38 | 35.55 | 2.48 | ± 0.05 | 2.61 | ± 0.07 | 1.05 |
| | 495 | 11.01 | 35.50 | 2.48 | ± 0.05 | 2.65 | ± 0.08 | 1.07 |
| | 594 | 10.74 | 35.47 | 2.47 | ± 0.05 | 2.52 | ± 0.07 | 1.02 |
| | 693 | 9.78 | 35.32 | 2.46 | ± 0.05 | 2.56 | ± 0.07 | 1.04 |
| 792 | 8.77 | 35.29 | 2.46 | ± 0.05 | 2.69 | ± 0.08 | 1.09 | |
| 989 | 7.47 | 35.32 | 2.46 | ± 0.05 | 2.58 | ± 0.07 | 1.05 | |
| 1189 | 6.17 | 35.21 | 2.45 | ± 0.05 | 2.36 | ± 0.07 | 0.96 | |
| #26 50.3°N / -22.6°E 04/06/2014 | 20 | 11.69 | 35.34 | 2.46 | ± 0.05 | 1.90 | ± 0.06 | 0.77 |
| | 49 | 9.77 | 35.19 | 2.45 | ± 0.05 | 1.90 | ± 0.06 | 0.77 |
| | 74 | 9.65 | 35.19 | 2.45 | ± 0.05 | 1.96 | ± 0.06 | 0.80 |
| | 99 | 9.40 | 35.16 | 2.45 | ± 0.05 | 2.07 | ± 0.07 | 0.85 |
| | 199 | 8.88 | 35.17 | 2.45 | ± 0.05 | 2.46 | ± 0.08 | 1.00 |
| | 297 | 8.17 | 35.07 | 2.44 | ± 0.05 | 2.36 | ± 0.07 | 0.97 |
| | 397 | 7.18 | 34.95 | 2.43 | ± 0.05 | 2.47 | ± 0.08 | 1.01 |
| | 593 | 5.97 | 35.00 | 2.44 | ± 0.05 | 2.59 | ± 0.08 | 1.07 |
| 792 | 5.23 | 35.03 | 2.44 | ± 0.05 | 2.60 | ± 0.08 | 1.07 | |
| #32 55.5°N / -26.7°E 08/06/2014 | 11 | 10.51 | 35.13 | 2.45 | ± 0.05 | 1.63 | ± 0.08 | 0.67 |
| | 20 | 10.48 | 35.13 | 2.45 | ± 0.05 | 1.58 | ± 0.06 | 0.65 |
| | 40 | 8.89 | 35.07 | 2.44 | ± 0.05 | 1.88 | ± 0.06 | 0.77 |
| | 60 | 8.60 | 35.08 | 2.44 | ± 0.05 | 1.87 | ± 0.05 | 0.77 |
| | 99 | 8.67 | 35.13 | 2.45 | ± 0.05 | 1.64 | ± 0.05 | 0.67 |
| | 119 | 8.08 | 35.04 | 2.44 | ± 0.05 | 2.32 | ± 0.06 | 0.95 |
| | 139 | 7.88 | 35.03 | 2.44 | ± 0.05 | 2.59 | ± 0.08 | 1.06 |
| | 160 | 8.23 | 35.12 | 2.45 | ± 0.05 | 2.48 | ± 0.07 | 1.01 |
| | 199 | 7.99 | 35.09 | 2.44 | ± 0.05 | 2.42 | ± 0.07 | 0.99 |
| | 298 | 7.05 | 34.98 | 2.43 | ± 0.05 | 2.48 | ± 0.07 | 1.02 |
| | 376 | 5.99 | 34.89 | 2.43 | ± 0.05 | 2.52 | ± 0.07 | 1.04 |
| | 446 | 6.36 | 35.04 | 2.44 | ± 0.05 | 2.47 | ± 0.07 | 1.01 |
| | 494 | 5.70 | 34.98 | 2.43 | ± 0.05 | 2.50 | ± 0.07 | 1.03 |
| | 593 | 5.15 | 34.98 | 2.43 | ± 0.05 | 2.52 | ± 0.08 | 1.04 |
| 693 | 4.78 | 34.96 | 2.43 | ± 0.05 | 2.45 | ± 0.07 | 1.01 | |
| 792 | 4.48 | 34.94 | 2.43 | ± 0.05 | 2.29 | ± 0.06 | 0.94 | |

| Station # | Depth m | Temperature °C | Salinity psu | ²³⁸ U dpm.L ⁻¹ | | ²³⁴ Th dpm.L ⁻¹ | | ²³⁴ Th/ ²³⁸ U |
|---------------------------------------|------------|-------------------|-----------------|---|--------|--|--------|-------------------------------------|
| #38 58.8°N / -31.3°E 11/06/2014 | 10 | 9.30 | 35.06 | 2.44 | ± 0.05 | 1.23 | ± 0.04 | 0.50 |
| | 19 | 9.18 | 35.06 | 2.44 | ± 0.05 | 1.48 | ± 0.05 | 0.61 |
| | 39 | 8.22 | 35.08 | 2.44 | ± 0.05 | 2.12 | ± 0.07 | 0.87 |
| | 60 | 8.00 | 35.11 | 2.44 | ± 0.05 | 2.38 | ± 0.07 | 0.97 |
| | 78 | 7.73 | 35.11 | 2.44 | ± 0.05 | 2.45 | ± 0.07 | 1.00 |
| | 99 | 7.73 | 35.13 | 2.45 | ± 0.05 | 2.61 | ± 0.08 | 1.07 |
| | 118 | 7.68 | 35.14 | 2.45 | ± 0.05 | 2.61 | ± 0.08 | 1.07 |
| | 138 | 7.67 | 35.14 | 2.45 | ± 0.05 | 2.41 | ± 0.07 | 0.99 |
| | 158 | 7.62 | 35.14 | 2.45 | ± 0.05 | 2.43 | ± 0.07 | 0.99 |
| | 178 | 7.59 | 35.14 | 2.45 | ± 0.05 | 2.51 | ± 0.07 | 1.02 |
| | 198 | 7.60 | 35.15 | 2.45 | ± 0.05 | 2.46 | ± 0.07 | 1.01 |
| | 298 | 7.41 | 35.14 | 2.45 | ± 0.05 | 2.40 | ± 0.08 | 0.98 |
| | 396 | 7.21 | 35.13 | 2.45 | ± 0.05 | 2.50 | ± 0.09 | 1.02 |
| | 494 | 6.86 | 35.11 | 2.44 | ± 0.05 | 2.45 | ± 0.09 | 1.00 |
| | 593 | 6.32 | 35.09 | 2.44 | ± 0.05 | 2.48 | ± 0.08 | 1.01 |
| 693 | 5.68 | 35.05 | 2.44 | ± 0.05 | 2.54 | ± 0.09 | 1.04 | |
| 791 | 5.00 | 35.01 | 2.44 | ± 0.05 | 2.51 | ± 0.09 | 1.03 | |
| #44 59.6°N / -38.9°E 14/06/2014 | 9 | 6.83 | 34.85 | 2.42 | ± 0.05 | 1.91 | ± 0.06 | 0.79 |
| | 20 | 6.80 | 34.85 | 2.42 | ± 0.05 | 2.18 | ± 0.06 | 0.90 |
| | 40 | 5.07 | 34.89 | 2.43 | ± 0.05 | 2.42 | ± 0.07 | 1.00 |
| | 59 | 4.49 | 34.87 | 2.43 | ± 0.05 | 2.46 | ± 0.07 | 1.01 |
| | 79 | 4.33 | 34.90 | 2.43 | ± 0.05 | 2.31 | ± 0.06 | 0.95 |
| | 99 | 4.28 | 34.91 | 2.43 | ± 0.05 | 2.40 | ± 0.06 | 0.99 |
| | 118 | 4.12 | 34.89 | 2.43 | ± 0.05 | 2.44 | ± 0.07 | 1.00 |
| | 138 | 4.03 | 34.89 | 2.43 | ± 0.05 | 2.23 | ± 0.05 | 0.92 |
| | 158 | 4.04 | 34.89 | 2.43 | ± 0.05 | 2.42 | ± 0.07 | 1.00 |
| | 198 | 4.00 | 34.89 | 2.43 | ± 0.05 | 2.35 | ± 0.06 | 0.97 |
| | 297 | 3.92 | 34.89 | 2.43 | ± 0.05 | 2.56 | ± 0.06 | 1.05 |
| | 396 | 3.88 | 34.89 | 2.43 | ± 0.05 | 2.56 | ± 0.07 | 1.05 |
| | 495 | 3.79 | 34.88 | 2.43 | ± 0.05 | 2.38 | ± 0.06 | 0.98 |
| | 594 | 3.73 | 34.88 | 2.43 | ± 0.05 | 2.35 | ± 0.05 | 0.97 |
| | 692 | 3.63 | 34.87 | 2.43 | ± 0.05 | 2.62 | ± 0.06 | 1.08 |
| 792 | 3.61 | 34.87 | 2.43 | ± 0.05 | 2.23 | ± 0.06 | 0.92 | |
| 1087 | 3.70 | 34.89 | 2.43 | ± 0.05 | 2.43 | ± 0.07 | 1.00 | |

| Station # | Depth m | Temperature °C | Salinity psu | ²³⁸ U dpm.L ⁻¹ | | ²³⁴ Th dpm.L ⁻¹ | | ²³⁴ Th/ ²³⁸ U |
|---------------------------------------|---------|----------------|--------------|--------------------------------------|--------|---------------------------------------|--------|-------------------------------------|
| #51 59.8°N / -42.0°E 18/06/2014 | 11 | 6.76 | 34.87 | 2.43 | ± 0.05 | 1.92 | ± 0.06 | 0.79 |
| | 19 | 6.65 | 34.88 | 2.43 | ± 0.05 | 1.89 | ± 0.05 | 0.78 |
| | 40 | 6.18 | 34.95 | 2.43 | ± 0.05 | 2.18 | ± 0.07 | 0.90 |
| | 60 | 5.96 | 34.97 | 2.43 | ± 0.05 | 2.07 | ± 0.06 | 0.85 |
| | 79 | 5.58 | 34.95 | 2.43 | ± 0.05 | 2.20 | ± 0.06 | 0.91 |
| | 100 | 5.51 | 34.95 | 2.43 | ± 0.05 | 2.44 | ± 0.07 | 1.00 |
| | 119 | 5.27 | 34.93 | 2.43 | ± 0.05 | 2.58 | ± 0.07 | 1.06 |
| | 139 | 5.13 | 34.92 | 2.43 | ± 0.05 | 2.42 | ± 0.07 | 1.00 |
| | 159 | 5.16 | 34.94 | 2.43 | ± 0.05 | 2.31 | ± 0.06 | 0.95 |
| | 178 | 4.93 | 34.92 | 2.43 | ± 0.05 | 2.44 | ± 0.07 | 1.01 |
| | 199 | 4.99 | 34.94 | 2.43 | ± 0.05 | 2.53 | ± 0.07 | 1.04 |
| | 298 | 4.97 | 34.96 | 2.43 | ± 0.05 | 2.51 | ± 0.07 | 1.03 |
| | 396 | 4.66 | 34.95 | 2.43 | ± 0.05 | 2.41 | ± 0.07 | 0.99 |
| | 495 | 4.51 | 34.94 | 2.43 | ± 0.05 | 2.26 | ± 0.06 | 0.93 |
| 593 | 4.17 | 34.92 | 2.43 | ± 0.05 | 2.30 | ± 0.06 | 0.94 | |
| 692 | 4.05 | 34.91 | 2.43 | ± 0.05 | 2.49 | ± 0.07 | 1.02 | |
| 791 | 4.01 | 34.92 | 2.43 | ± 0.05 | 2.46 | ± 0.07 | 1.01 | |
| #53 59.9°N / -43.1°E 16/06/2014 | 10 | -0.73 | 31.91 | 2.19 | ± 0.05 | 1.75 | ± 0.06 | 0.80 |
| | 20 | -1.21 | 32.14 | 2.21 | ± 0.05 | 2.08 | ± 0.10 | 0.94 |
| | 40 | -1.24 | 32.80 | 2.26 | ± 0.05 | 2.02 | ± 0.06 | 0.89 |
| | 59 | -1.47 | 33.05 | 2.28 | ± 0.05 | 2.20 | ± 0.07 | 0.96 |
| | 79 | -1.31 | 33.16 | 2.29 | ± 0.05 | 2.21 | ± 0.07 | 0.96 |
| | 99 | -0.79 | 33.36 | 2.31 | ± 0.05 | 2.08 | ± 0.07 | 0.90 |
| | 119 | 0.84 | 33.56 | 2.32 | ± 0.05 | 2.03 | ± 0.06 | 0.87 |
| 138 | -0.08 | 33.59 | 2.33 | ± 0.05 | 1.91 | ± 0.06 | 0.82 | |
| #64 59.1°N / -46.1°E 20/06/2014 | 9 | 6.55 | 34.80 | 2.42 | ± 0.05 | 1.89 | ± 0.10 | 0.78 |
| | 20 | 6.04 | 34.85 | 2.42 | ± 0.05 | 2.00 | ± 0.07 | 0.83 |
| | 40 | 5.93 | 34.87 | 2.43 | ± 0.05 | 1.88 | ± 0.07 | 0.78 |
| | 79 | 5.37 | 34.95 | 2.43 | ± 0.05 | 2.46 | ± 0.09 | 1.01 |
| | 99 | 5.35 | 34.96 | 2.43 | ± 0.05 | 2.57 | ± 0.09 | 1.06 |
| | 139 | 5.17 | 34.96 | 2.43 | ± 0.05 | 2.43 | ± 0.09 | 1.00 |
| | 159 | 4.92 | 34.94 | 2.43 | ± 0.05 | 2.43 | ± 0.09 | 1.00 |
| | 197 | 4.78 | 34.93 | 2.43 | ± 0.05 | 2.31 | ± 0.08 | 0.95 |
| | 297 | 4.51 | 34.93 | 2.43 | ± 0.05 | 2.33 | ± 0.09 | 0.96 |
| | 396 | 4.35 | 34.93 | 2.43 | ± 0.05 | 2.45 | ± 0.09 | 1.01 |
| | 494 | 4.10 | 34.91 | 2.43 | ± 0.05 | 2.54 | ± 0.09 | 1.04 |
| | 594 | 3.97 | 34.90 | 2.43 | ± 0.05 | 2.52 | ± 0.09 | 1.04 |
| 692 | 3.88 | 34.89 | 2.43 | ± 0.05 | 2.42 | ± 0.09 | 1.00 | |
| 792 | 3.71 | 34.88 | 2.43 | ± 0.05 | 2.46 | ± 0.09 | 1.01 | |
| 890 | 3.64 | 34.87 | 2.43 | ± 0.05 | 2.46 | ± 0.09 | 1.02 | |

| Station # | Depth m | Temperature °C | Salinity psu | ²³⁸ U dpm.L ⁻¹ | | ²³⁴ Th dpm.L ⁻¹ | | ²³⁴ Th/ ²³⁸ U |
|---------------------------------------|---------|----------------|--------------|--------------------------------------|--------|---------------------------------------|--------|-------------------------------------|
| #69 55.8°N / -48.1°E 23/06/2014 | 11 | 6.23 | 34.61 | 2.41 | ± 0.05 | 1.58 | ± 0.05 | 0.66 |
| | 20 | 6.15 | 34.61 | 2.41 | ± 0.05 | 1.84 | ± 0.05 | 0.77 |
| | 59 | 3.73 | 34.77 | 2.42 | ± 0.05 | 2.58 | ± 0.09 | 1.07 |
| | 80 | 3.92 | 34.83 | 2.42 | ± 0.05 | 2.52 | ± 0.08 | 1.04 |
| | 99 | 3.83 | 34.82 | 2.42 | ± 0.05 | 2.62 | ± 0.08 | 1.08 |
| | 119 | 3.95 | 34.85 | 2.42 | ± 0.05 | 2.55 | ± 0.08 | 1.05 |
| | 139 | 3.91 | 34.86 | 2.42 | ± 0.05 | 2.45 | ± 0.08 | 1.01 |
| | 159 | 3.83 | 34.86 | 2.42 | ± 0.05 | 2.41 | ± 0.07 | 0.99 |
| | 199 | 3.58 | 34.84 | 2.42 | ± 0.05 | 2.61 | ± 0.08 | 1.08 |
| | 298 | 3.54 | 34.85 | 2.42 | ± 0.05 | 2.56 | ± 0.08 | 1.05 |
| | 496 | 3.51 | 34.85 | 2.42 | ± 0.05 | 2.33 | ± 0.07 | 0.96 |
| | 595 | 3.48 | 34.85 | 2.42 | ± 0.05 | 2.50 | ± 0.08 | 1.03 |
| | 693 | 3.47 | 34.85 | 2.42 | ± 0.05 | 2.37 | ± 0.07 | 0.98 |
| | 792 | 3.48 | 34.85 | 2.42 | ± 0.05 | 2.53 | ± 0.08 | 1.04 |
| 890 | 3.48 | 34.85 | 2.42 | ± 0.05 | 2.32 | ± 0.08 | 0.96 | |
| 990 | 3.46 | 34.85 | 2.42 | ± 0.05 | 2.36 | ± 0.07 | 0.98 | |
| #77 53.0°N / -51.1°E 26/06/2014 | 10 | 6.92 | 34.49 | 2.40 | ± 0.05 | 1.80 | ± 0.07 | 0.75 |
| | 20 | 6.27 | 34.56 | 2.40 | ± 0.05 | 1.76 | ± 0.07 | 0.73 |
| | 39 | 5.11 | 34.64 | 2.41 | ± 0.05 | 2.12 | ± 0.08 | 0.88 |
| | 59 | 4.09 | 34.71 | 2.41 | ± 0.05 | 2.39 | ± 0.10 | 0.99 |
| | 79 | 3.60 | 34.74 | 2.42 | ± 0.05 | 2.27 | ± 0.07 | 0.94 |
| | 100 | 3.49 | 34.76 | 2.42 | ± 0.05 | 2.64 | ± 0.08 | 1.09 |
| | 119 | 3.44 | 34.77 | 2.42 | ± 0.05 | 2.52 | ± 0.08 | 1.04 |
| | 139 | 3.41 | 34.79 | 2.42 | ± 0.05 | 2.57 | ± 0.08 | 1.06 |
| | 159 | 3.43 | 34.81 | 2.42 | ± 0.05 | 2.64 | ± 0.08 | 1.09 |
| | 199 | 3.46 | 34.83 | 2.42 | ± 0.05 | 2.36 | ± 0.08 | 0.97 |
| | 298 | 3.53 | 34.85 | 2.42 | ± 0.05 | 2.57 | ± 0.09 | 1.06 |
| | 397 | 3.57 | 34.86 | 2.42 | ± 0.05 | 2.67 | ± 0.09 | 1.10 |
| | 495 | 3.52 | 34.86 | 2.42 | ± 0.05 | 2.60 | ± 0.09 | 1.07 |
| | 595 | 3.56 | 34.87 | 2.43 | ± 0.05 | 2.49 | ± 0.08 | 1.03 |
| 693 | 3.49 | 34.86 | 2.43 | ± 0.05 | 2.69 | ± 0.08 | 1.11 | |

Table S2: Particulate ^{234}Th activities and POC concentrations in the small (SSF; 1-53 μm) and large size fraction (LSF; $>53 \mu\text{m}$).

| Station | Depth | 1-53 μm (SSF) | | | | $>53 \mu\text{m}$ (LSF) | | | |
|---------------------------|-------|--------------------------|---------|------------------------|---------|-------------------------|---------|------------------------|---------|
| | | ^{234}Th | | POC | | ^{234}Th | | POC | |
| # | m | dpm L ⁻¹ | | $\mu\text{mol L}^{-1}$ | | dpm L ⁻¹ | | $\mu\text{mol L}^{-1}$ | |
| #1 40.3°N -10.0 °E | 30 | 0.163 | ± 0.005 | 2.639 | ± 0.099 | 0.021 | ± 0.001 | 0.651 | ± 0.009 |
| | 80 | 0.086 | ± 0.003 | 0.208 | ± 0.017 | 0.022 | ± 0.001 | 0.357 | ± 0.005 |
| | 120 | 0.188 | ± 0.006 | 0.567 | ± 0.035 | 0.021 | ± 0.001 | 0.105 | ± 0.005 |
| | 250 | 0.171 | ± 0.004 | 0.428 | ± 0.019 | 0.038 | ± 0.001 | 0.068 | ± 0.006 |
| | 550 | 0.123 | ± 0.004 | 0.217 | ± 0.016 | 0.014 | ± 0.000 | 0.023 | ± 0.002 |
| | 800 | 0.068 | ± 0.003 | 0.035 | ± 0.032 | 0.011 | ± 0.001 | 0.024 | ± 0.005 |
| #13 41.4°N -13.9 °E | 30 | 0.456 | ± 0.004 | 2.160 | ± 0.035 | 0.028 | ± 0.001 | 0.196 | ± 0.005 |
| | 80 | 0.529 | ± 0.004 | 1.170 | ± 0.027 | 0.030 | ± 0.001 | 0.080 | ± 0.004 |
| | 120 | 0.431 | ± 0.004 | | ± | 0.032 | ± 0.001 | 0.039 | ± 0.005 |
| | 250 | 0.210 | ± 0.002 | 0.366 | ± 0.021 | 0.020 | ± 0.001 | 0.027 | ± 0.003 |
| | 450 | 0.133 | ± 0.001 | 0.266 | ± 0.016 | 0.009 | ± 0.000 | 0.018 | ± 0.002 |
| #21 46.5°N -19.7°E | 15 | 0.280 | ± 0.009 | 6.053 | ± 0.068 | 0.161 | ± 0.003 | 4.747 | ± 0.020 |
| | 60 | 0.775 | ± 0.017 | 4.064 | ± 0.105 | 0.243 | ± 0.005 | 1.201 | ± 0.031 |
| | 100 | 0.225 | ± 0.005 | 0.545 | ± 0.023 | 0.052 | ± 0.001 | 0.133 | ± 0.007 |
| | 200 | 0.122 | ± 0.003 | 0.360 | ± 0.021 | 0.038 | ± 0.001 | 0.046 | ± 0.002 |
| | 450 | 0.114 | ± 0.003 | 0.234 | ± 0.016 | 0.022 | ± 0.000 | 0.023 | ± 0.002 |
| | 800 | 0.108 | ± 0.002 | 0.158 | ± 0.013 | 0.014 | ± 0.000 | 0.017 | ± 0.001 |
| #26 50.3°N -22.6°E | 30 | 0.279 | ± 0.008 | 4.792 | ± 0.059 | 0.206 | ± 0.004 | 2.572 | ± 0.017 |
| | 83 | 0.225 | ± 0.005 | 0.848 | ± 0.022 | 0.201 | ± 0.002 | 0.877 | ± 0.007 |
| | 153 | 0.131 | ± 0.003 | 0.400 | ± 0.021 | 0.030 | ± 0.001 | 0.123 | ± 0.003 |
| | 400 | 0.111 | ± 0.005 | 0.240 | ± 0.049 | 0.012 | ± 0.001 | 0.035 | ± 0.007 |
| #32 55.5°N -26.7°E | 30 | 0.109 | ± 0.003 | 5.830 | ± 0.097 | 0.045 | ± 0.002 | 0.292 | ± 0.014 |
| | 60 | 0.359 | ± 0.007 | 1.565 | ± 0.027 | 0.027 | ± 0.001 | 0.124 | ± 0.004 |
| | 100 | 0.224 | ± 0.005 | 0.887 | ± 0.024 | 0.080 | ± 0.002 | 0.338 | ± 0.007 |
| | 200 | 0.121 | ± 0.004 | 0.467 | ± 0.022 | 0.010 | ± 0.000 | 0.046 | ± 0.003 |
| | 450 | 0.078 | ± 0.002 | 0.240 | ± 0.017 | 0.012 | ± 0.000 | 0.037 | ± 0.002 |
| | 800 | 0.084 | ± 0.002 | 0.203 | ± 0.015 | 0.010 | ± 0.000 | 0.066 | ± 0.002 |
| #38 58.8°N -31.3°E | 20 | 0.239 | ± 0.006 | 2.231 | ± 0.041 | 0.028 | ± 0.001 | 0.156 | ± 0.004 |
| | 60 | 0.290 | ± 0.006 | 1.273 | ± 0.028 | 0.037 | ± 0.001 | 0.128 | ± 0.004 |
| | 109 | 0.143 | ± 0.003 | 0.621 | ± 0.018 | 0.043 | ± 0.001 | 0.156 | ± 0.005 |
| | 396 | 0.133 | ± 0.004 | 0.292 | ± 0.036 | 0.009 | ± 0.000 | 0.030 | ± 0.005 |
| #44 59.6°N -38.9°E | 20 | 1.188 | ± 0.020 | 16.736 | ± 0.102 | 0.480 | ± 0.007 | 3.965 | ± 0.020 |
| | 40 | 0.474 | ± 0.010 | 3.550 | ± 0.056 | 0.041 | ± 0.001 | 0.133 | ± 0.013 |
| | 80 | 1.060 | ± 0.028 | 6.736 | ± 0.213 | 0.098 | ± 0.004 | 0.306 | ± 0.046 |
| | 150 | 0.116 | ± 0.004 | 0.392 | ± 0.041 | 0.005 | ± 0.000 | 0.026 | ± 0.009 |
| | 300 | 0.092 | ± 0.003 | 0.334 | ± 0.022 | 0.004 | ± 0.000 | 0.022 | ± 0.005 |
| | 500 | 0.067 | ± 0.002 | 0.187 | ± 0.016 | 0.005 | ± 0.000 | 0.016 | ± 0.004 |
| #51 59.8°N -42.0°E | 8 | 0.183 | ± 0.007 | 4.109 | ± 0.064 | 0.230 | ± 0.005 | 2.664 | ± 0.017 |
| | 20 | 0.958 | ± 0.025 | 8.974 | ± 0.111 | | | | |
| | 60 | 0.366 | ± 0.009 | 2.154 | ± 0.036 | 0.148 | ± 0.003 | 0.554 | ± 0.010 |
| | 70 | 0.451 | ± 0.009 | 2.375 | ± 0.034 | | | | |
| | 100 | 0.179 | ± 0.006 | 0.832 | ± 0.032 | 0.052 | ± 0.002 | 0.153 | ± 0.007 |
| | 150 | 0.193 | ± 0.006 | 0.747 | ± 0.039 | | | | |
| | 250 | 0.088 | ± 0.003 | 0.328 | ± 0.021 | 0.017 | ± 0.001 | 0.076 | ± 0.005 |

| Station | Depth | 1-53 μm (SSF) | | | | >53 μm (LSF) | | | |
|---------------------------------|-------|--------------------------|---------|------------------------|---------|-------------------------|---------|------------------------|---------|
| | | ^{234}Th | | POC | | ^{234}Th | | POC | |
| # | m | dpm L ⁻¹ | | $\mu\text{mol L}^{-1}$ | | dpm L ⁻¹ | | $\mu\text{mol L}^{-1}$ | |
| #64 59.1°N -46.1°E | 30 | 0.024 | ± 0.001 | 0.418 | ± 0.009 | 0.026 | ± 0.001 | 0.373 | ± 0.002 |
| | 60 | 0.174 | ± 0.007 | 1.726 | ± 0.054 | 0.015 | ± 0.001 | 0.154 | ± 0.012 |
| | 100 | 0.162 | ± 0.004 | 1.968 | ± 0.028 | 0.030 | ± 0.001 | 0.267 | ± 0.006 |
| | 150 | 0.118 | ± 0.005 | 0.189 | ± 0.046 | 0.035 | ± 0.002 | 0.208 | ± 0.007 |
| | 400 | 0.113 | ± 0.003 | 0.309 | ± 0.019 | 0.010 | ± 0.000 | 0.054 | ± 0.004 |
| #69 55.8°N -48.1°E | 30 | 0.206 | ± 0.007 | 4.130 | ± 0.052 | 0.070 | ± 0.002 | 1.077 | ± 0.013 |
| | 60 | 0.159 | ± 0.005 | 1.958 | ± 0.040 | 0.015 | ± 0.001 | 0.172 | ± 0.009 |
| | 100 | 0.124 | ± 0.004 | 1.655 | ± 0.028 | 0.030 | ± 0.001 | 0.299 | ± 0.007 |
| | 150 | 0.097 | ± 0.004 | 0.895 | ± 0.039 | 0.010 | ± 0.001 | 0.083 | ± 0.009 |
| | 410 | 0.069 | ± 0.002 | 0.313 | ± 0.022 | 0.006 | ± 0.000 | 0.075 | ± 0.005 |
| #77 53.0°N -51.1°E | 10 | 0.313 | ± 0.011 | 11.182 | ± 0.098 | 0.206 | ± 0.006 | 3.039 | ± 0.021 |
| | 50 | 0.447 | ± 0.012 | 5.488 | ± 0.067 | 0.057 | ± 0.002 | 0.425 | ± 0.016 |
| | 80 | 0.150 | ± 0.004 | 2.347 | ± 0.028 | 0.039 | ± 0.001 | 0.339 | ± 0.007 |
| | 200 | 0.100 | ± 0.004 | 0.533 | ± 0.040 | 0.009 | ± 0.000 | 0.081 | ± 0.008 |
| | 460 | 0.069 | ± 0.003 | 0.167 | ± 0.017 | 0.011 | ± 0.000 | 0.060 | ± 0.004 |

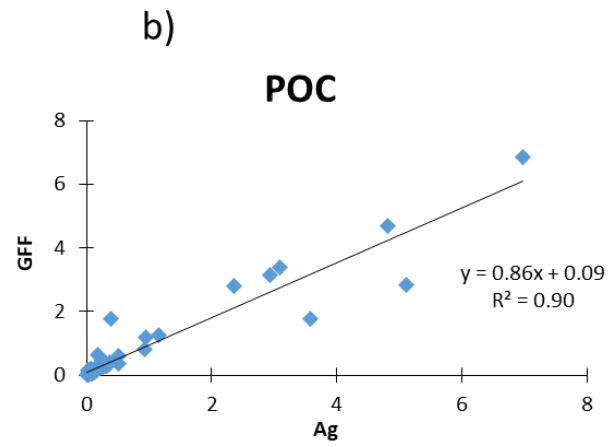
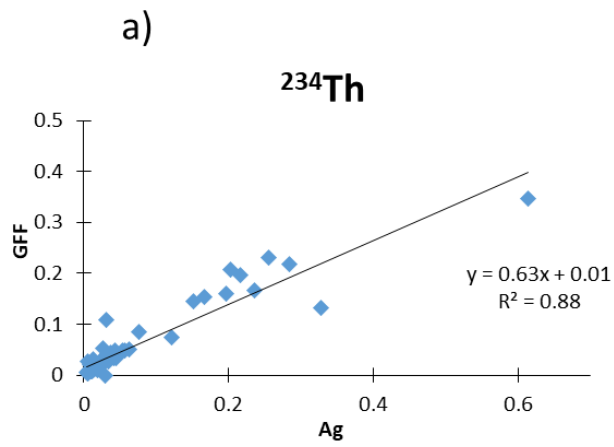


Figure S1: Comparison between a) ²³⁴Th activities and b) POC concentrations measured on GF/F and silver (Ag) filters.

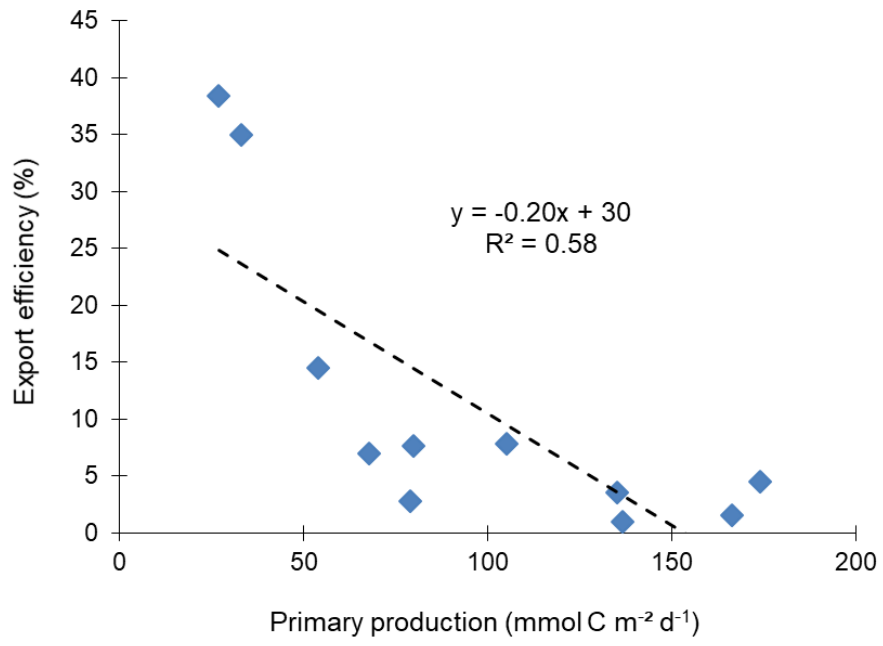


Figure S2: Export efficiency (in %) as a function of primary production (mmol C m⁻² d⁻¹).