

Table S1. General information of the KM3Net stations, and estimates obtained from the integration of the shear and strain spectra, completed with the morphological parameters inferred from bathymetry. Estimates represent the averages in bins of 80m in the layer 360-920m distant from the bottom.

Station (symbol)	Bottom (m)	$\overline{N^2}$ (s^{-2})	$\overline{R_\omega}$	$std(R_\omega)$	$\overline{R_{sh}}$	$\overline{R_{st}}$	$\overline{\omega}$ (s^{-1})	$std(\omega)$	ΔSI $^\circ$	Rough. $var(z)$	SI $^\circ$	Dir. Flow	$\overline{U_{bott}}$ (m s)	$std(U_{bott})$	$\overline{\epsilon}$ ($W\ kg^{-1}$)	$std(\epsilon)$	Mean $\overline{K}$ ($m^2\ s^{-1}$)	$std(K)$
NK30▲	-1390	3.99e-06	8.50	6.42	1.81	0.64	1.16e-04	2.18e-05	3.27	4.98	1.79	-40	0.03	0.01	1.16e-10	1.67e-10	7.36e-06	2.79e-06
NK31▲	-2069	3.91e-07	10.40	4.80	4.25	1.23	1.02e-04	7.55e-06	3.85	4.56	0.86	-40	0.03	0.01	4.74e-11	2.28e-11	2.41e-05	1.13e-05
NK32▲	-2358	3.32e-07	24.16	3.23	7.33	0.91	9.27e-05	5.41e-07	1.94	4.33	0.78	-40	0.03	0.01	7.63e-11	6.57e-11	4.55e-05	3.77e-05
NK34▲	-3437	3.10e-07	8.37	1.89	3.42	1.23	1.00e-04	3.85e-06	3.80	4.85	1.49	-40	0.06	0.01	3.10e-11	2.44e-11	2.00e-05	1.58e-05
NK21■	-3321	3.10e-07	9.48	2.13	6.29	1.99	9.76e-05	2.22e-06	3.89	4.05	0.79	-65	0.04	0.02	8.00e-11	2.08e-11	5.16e-05	1.36e-05
NK22■	-3068	3.21e-07	29.79	3.83	9.64	0.97	9.08e-05	4.10e-07	1.46	4.44	1.01	-65	0.03	0.01	9.69e-11	2.01e-11	6.05e-05	1.28e-05
NK23■	-2980	3.17e-07	14.00	4.12	5.98	1.28	9.55e-05	3.12e-06	2.62	4.61	1.28	-65	0.03	0.01	6.80e-11	4.38e-11	4.25e-05	2.66e-05
NK24■	-2482	3.17e-07	22.25	10.35	4.92	0.66	9.37e-05	2.84e-06	2.67	3.83	0.52	-65	0.03	0.01	3.10e-11	1.52e-11	1.96e-05	9.80e-06
NK25■	-2232	3.39e-07	12.20	5.49	4.28	1.05	1.02e-04	1.19e-05	4.03	4.40	0.78	-65	0.02	0.01	3.70e-11	2.00e-11	2.19e-05	1.19e-05
NK26■	-1886	4.07e-07	8.59	3.54	3.43	1.20	1.03e-04	7.82e-06	4.22	4.15	0.61	-25	0.02	0.00	3.81e-11	1.70e-11	1.88e-05	8.32e-06
NK27■	-1501	9.84e-07	7.12	1.34	7.90	3.33	1.04e-04	4.49e-06	1.70	5.26	2.48	-25	0.05	0.01	5.14e-10	5.69e-10	1.75e-04	2.14e-04
NK28■	-536	nan	nan	nan	nan	nan	nan	nan	nan	5.68	3.74	N.A.	0.04	0.00	nan	nan	nan	nan
NK10◆	-3297	3.07e-07	17.00	6.50	6.50	1.15	9.31e-05	2.78e-06	3.51	3.27	0.17	-75	0.04	0.01	5.89e-11	3.19e-11	3.89e-05	2.17e-05
NK11◆	-3311	3.03e-07	16.84	3.44	7.62	1.36	9.24e-05	1.02e-06	3.26	3.16	0.17	-75	0.05	0.01	7.87e-11	1.85e-11	5.18e-05	1.20e-05
NK12◆	-3232	3.07e-07	9.54	4.66	4.24	1.33	9.90e-05	4.76e-06	4.76	2.90	0.25	-75	0.06	0.01	3.63e-11	7.25e-12	2.37e-05	4.87e-06
NK13◆	-3278	3.16e-07	12.65	4.63	7.22	1.71	9.52e-05	2.56e-06	3.16	4.72	1.00	-75	0.05	0.02	9.41e-11	3.85e-11	5.96e-05	2.45e-05
NK14◆	-2926	3.02e-07	8.48	2.24	3.72	1.32	9.91e-05	3.18e-06	4.47	4.33	0.86	-75	0.03	0.01	3.12e-11	1.90e-11	2.02e-05	1.16e-05
NK15◆	-2984	3.58e-07	3.34	0.69	3.89	3.49	1.21e-04	7.61e-06	7.14	4.73	1.69	-75	0.03	0.01	8.28e-11	2.21e-11	4.62e-05	1.17e-05

NK18♦	-2324	3.65e-07	6.52	1.92	3.18	1.46	1.05e-04	7.59e-06	0.19	5.79	5.70	-75	0.03	0.01	3.36e-11	1.92e-11	1.79e-05	9.13e-06
3×	-4083	2.81e-07	9.94	3.74	3.35	1.01	9.59e-05	3.65e-06	4.87	2.78	0.07	-35	0.05	0.01	2.11e-11	1.09e-11	1.48e-05	7.28e-06
11×	-3534	3.14e-07	16.67	8.19	8.33	1.50	9.33e-05	4.12e-06	3.49	3.66	0.32	-35	0.08	0.02	1.44e-10	1.46e-10	8.84e-05	8.66e-05
12×	-3535	3.03e-07	10.83	6.79	3.31	0.92	1.00e-04	9.93e-06	5.20	3.78	0.50	75	0.02	0.01	2.10e-11	1.24e-11	1.39e-05	8.25e-06
13×	-3207	3.25e-07	5.37	2.42	3.17	1.77	1.09e-04	8.34e-06	6.71	3.73	0.23	60	0.03	0.02	3.28e-11	1.51e-11	2.04e-05	9.80e-06
KM3×	-3388	3.20e-07	6.08	3.67	4.06	2.00	1.12e-04	1.70e-05	6.94	3.64	0.29	-85	0.09	0.01	6.73e-11	4.94e-11	4.24e-05	3.15e-05
KM4×	-3434	3.02e-07	18.59	7.88	6.63	1.07	9.26e-05	3.78e-06	3.27	3.47	0.32	-85	0.05	0.02	5.90e-11	2.20e-11	3.92e-05	1.49e-05
NK1×	-3236	3.25e-07	18.45	11.22	5.94	0.97	9.35e-05	3.68e-06	3.39	3.30	0.33	-75	0.07	0.01	5.79e-11	3.14e-11	3.52e-05	1.85e-05
NK2×	-3267	3.06e-07	12.25	6.09	4.26	1.04	9.60e-05	4.31e-06	4.18	3.21	0.28	-85	0.07	0.01	3.37e-11	1.29e-11	2.17e-05	7.39e-06
NK17×	-4032	2.92e-07	16.69	6.46	8.70	1.56	9.37e-05	3.36e-06	2.99	4.04	0.88	20	0.06	0.01	1.04e-10	4.70e-11	7.08e-05	3.18e-05
NK4●	-3462	3.08e-07	4.70	1.79	2.98	1.90	1.13e-04	1.25e-05	7.48	3.53	0.36	-85	0.03	0.01	3.18e-11	8.39e-12	2.07e-05	5.71e-06
NK5●	-3467	3.10e-07	14.60	5.97	6.13	1.26	9.44e-05	4.37e-06	3.84	3.65	0.29	N.A.	0.10	0.01	6.00e-11	3.49e-11	3.86e-05	2.25e-05
NK6●	-3278	3.34e-07	5.20	5.76	2.76	1.60	3.76e-04	3.83e-04	13.23	5.50	3.14	-85	0.08	0.01	1.43e-10	1.56e-10	8.33e-05	8.90e-05
NK8●	-1186	nan	nan	nan	nan	nan	nan	nan	nan	5.78	4.49	N.A.	0.09	0.02	nan	nan	nan	nan
NK8b●	-1186	nan	nan	nan	nan	nan	nan	nan	nan	5.78	4.49	-85	0.09	0.02	nan	nan	nan	nan
NK9●	-311	nan	nan	nan	nan	nan	nan	nan	nan	5.51	3.23	N.A.	nan	nan	nan	nan	nan	nan
NK19●	-239	nan	nan	nan	nan	nan	nan	nan	nan	4.82	1.16	N.A.	nan	nan	nan	nan	nan	nan
NK20●	-198	nan	nan	nan	nan	nan	nan	nan	nan	5.14	2.21	N.A.	nan	nan	nan	nan	nan	nan