



Supplement of

Tracking marine heatwaves in the Balearic Sea: temperature trends and the role of detection methods

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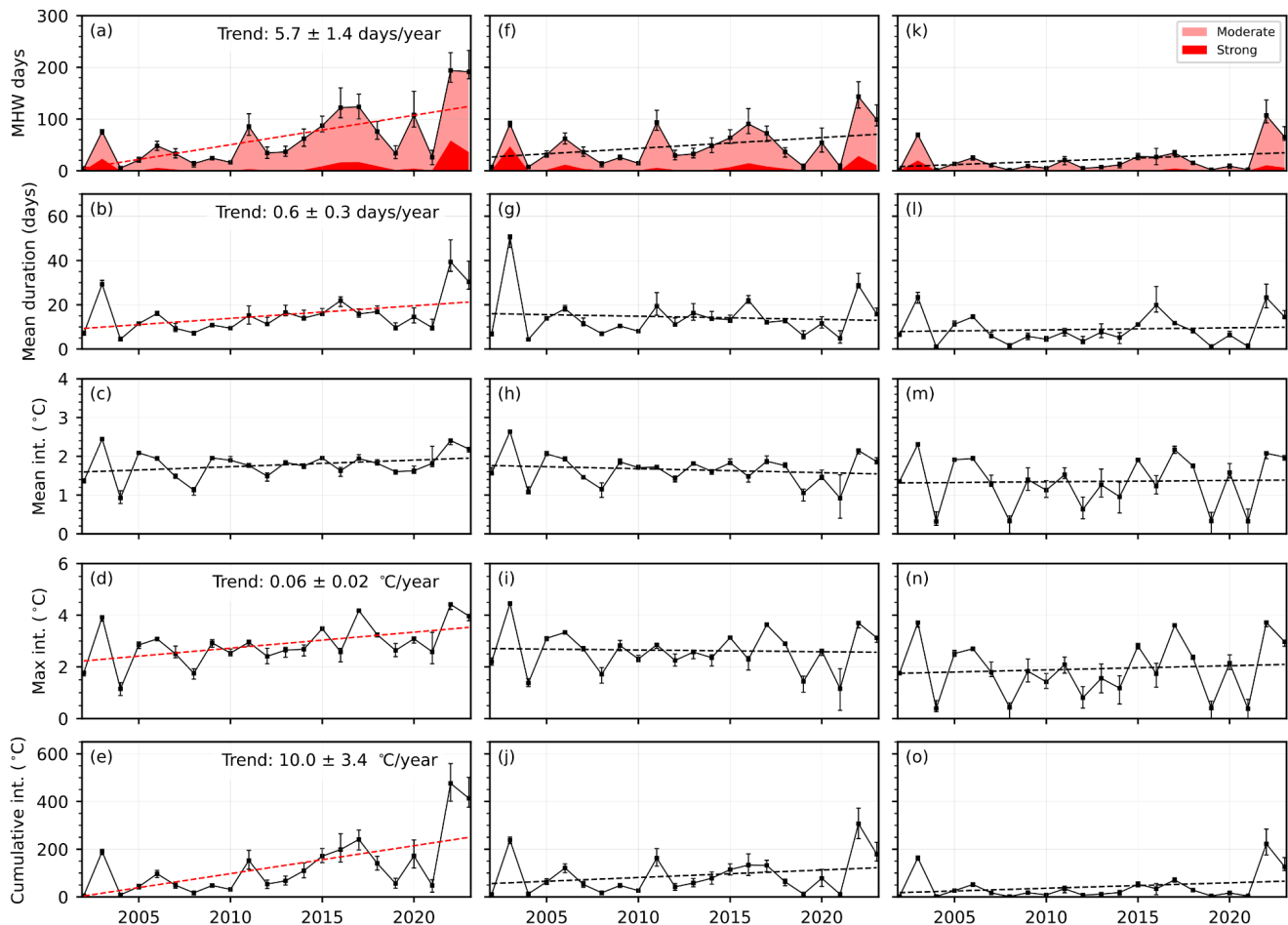


Figure S1: Spatially averaged metrics of MHWs detected in the Balearic Sea from 2002 to 2023 using (a-e) a fixed baseline, (f-j) a moving baseline and (k-o) detrended data. (a, f, k) Annual number of MHW days. The colours indicate the category of the MHW, with darker colours representing more intense MHWs. (b, g, l) Annual mean duration of the MHW events. (c, h, m) Annually averaged mean intensity of MHW events. (d, i, n) Annually averaged maximum intensity of MHW events. (e, j, o) Annually averaged cumulative intensity of MHW events. Dashed lines represent linear trends. Trends that are statistically significant (p -value < 0.05) are shown in red, along with the trend magnitude.

Table S1. Spatially averaged MHW days and annually averaged mean duration of MHWs detected in the Balearic Sea between 2002 and 2023 using a fixed baseline, moving baseline and detrended data.

Year	MHW days			Mean duration (days)		
	Fixed	Moving	Detrended	Fixed	Moving	Detrended
2002	4.26	6.79	1.74	6.99	6.78	6.47
2003	76.01	90.34	69.56	29.30	50.47	23.44
2004	5.25	7.42	1.22	4.45	4.35	1.03
2005	20.54	31.03	13.38	11.50	13.83	11.20
2006	48.12	62.04	25.13	16.07	18.20	14.55
2007	32.77	35.88	10.30	9.35	11.53	5.92
2008	13.80	13.47	1.20	7.32	7.01	1.72
2009	24.27	25.64	9.15	10.83	10.42	5.75
2010	16.27	14.53	4.90	9.45	8.06	4.46
2011	85.62	93.55	20.73	15.17	19.42	7.75
2012	34.25	29.39	4.77	11.29	11.11	3.55
2013	36.52	32.52	6.86	16.55	16.27	7.66
2014	62.03	47.80	11.58	14.03	13.76	5.20
2015	87.26	63.72	27.65	16.08	13.28	11.12
2016	122.04	90.60	26.47	21.88	22.06	19.86
2017	123.59	72.29	34.29	15.87	12.06	11.74
2018	75.77	36.43	15.19	16.91	12.85	8.18
2019	33.59	8.55	1.85	9.68	5.99	1.12
2020	107.93	54.22	8.81	14.56	11.54	6.36
2021	25.95	7.91	2.16	9.65	4.84	1.19
2022	194.06	143.44	107.02	39.37	28.79	23.28
2023	191.41	98.86	65.19	30.32	15.75	14.47

Table S2. Spatially averaged annual mean, maximum and cumulative intensity of MHWs detected in the Balearic Sea between 2002 and 2023 using a fixed baseline, moving baseline and detrended data.

Year	Mean intensity (°C)			Maximum intensity (°C)			Cumulative intensity (°C)		
	Fixed	Moving	Detr.	Fixed	Moving	Detr.	Fixed	Moving	Detr.
2002	1.36	1.56	1.35	1.77	2.20	1.76	5.74	10.29	2.36
2003	2.44	2.64	2.31	3.92	4.46	3.71	190.03	238.02	163.42
2004	0.92	1.08	0.32	1.15	1.37	0.39	8.96	13.26	1.98
2005	2.09	2.06	1.91	2.85	3.11	2.52	42.74	63.11	26.42
2006	1.94	1.93	1.94	3.08	3.33	2.70	97.00	121.40	52.21
2007	1.47	1.46	1.30	2.50	2.69	1.79	49.06	52.43	16.93
2008	1.13	1.15	0.33	1.75	1.71	0.43	17.36	17.42	1.65
2009	1.96	1.86	1.40	2.93	2.83	1.83	47.78	48.02	18.00
2010	1.90	1.71	1.13	2.53	2.31	1.42	31.36	26.51	8.48
2011	1.76	1.72	1.52	2.95	2.85	2.09	152.92	162.60	34.03
2012	1.49	1.43	0.63	2.41	2.25	0.81	53.89	58.40	7.67
2013	1.84	1.81	1.27	2.65	2.57	1.56	67.57	58.40	11.84
2014	1.75	1.61	0.96	2.68	2.35	1.18	109.96	78.54	18.78
2015	1.96	1.83	1.91	3.48	3.13	2.81	171.02	114.54	53.28
2016	1.63	1.48	1.23	2.58	2.29	1.73	198.56	133.70	34.38
2017	1.94	1.87	2.17	4.18	3.63	3.61	241.01	132.34	71.12
2018	1.82	1.76	1.75	3.25	2.90	2.36	140.68	63.20	28.51
2019	1.60	1.05	0.33	2.64	1.43	0.40	56.21	12.48	4.27
2020	1.63	1.47	1.58	3.09	2.62	2.14	172.17	78.11	16.54
2021	1.82	0.92	0.32	2.58	1.16	0.38	48.12	11.21	4.24
2022	2.41	2.15	2.08	4.42	3.70	3.72	475.81	306.83	222.42
2023	2.19	1.86	1.98	3.97	3.13	2.97	413.34	178.90	126.48