

Hydrographic and biological components of the seascape structure the meroplankton community in a frontal system

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Supplement. Additional data

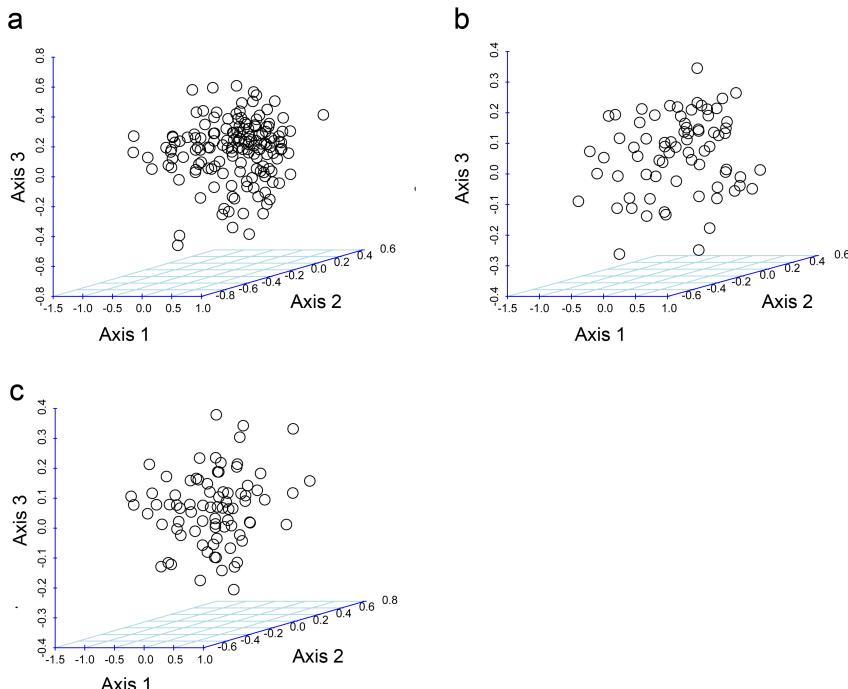


Fig. S1. Non-metric multidimensional scaling (NMDS) ordination depicting the relative similarity in species composition among the stations of (a) 2004 and 2005 combined, (b) 2004 and (c) 2005. Each axis was afterwards modelled using general additive modelling

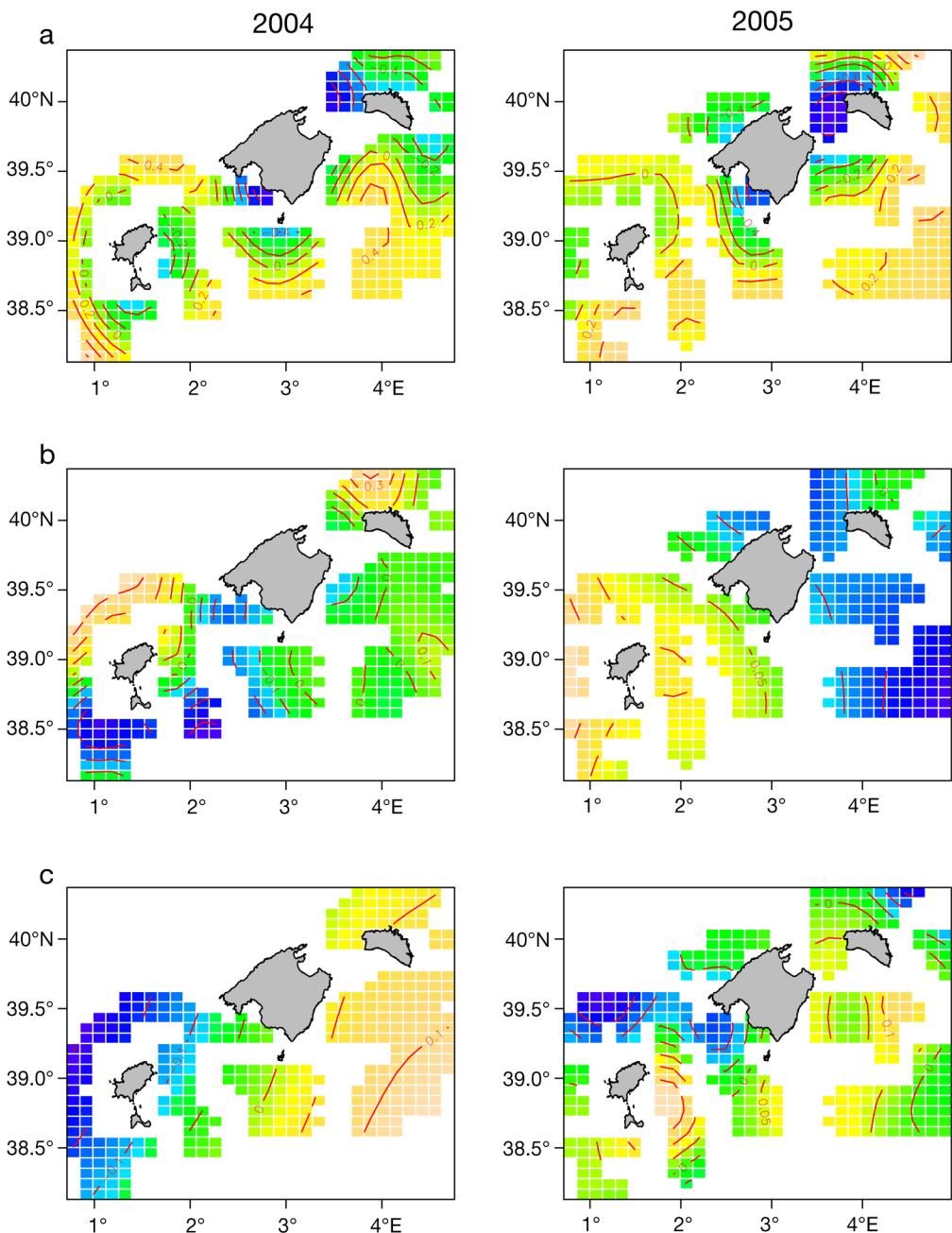


Fig. S2. Spatial pattern of (a) Axis 1, (b) Axis 2 and (c) Axis 3 of (left) 2004 and (right) 2005 obtained from a general additive model (GAM) with a bivariate geographical effect (longitude, latitude) as unique covariate. Low values are shown in purple-blue, while positive values appear in pink-yellow. For all the models, the geographic effect was significant ($p < 0.05$)

Table S1. List of taxa of fish and crustacean larvae, and cephalopod paralarvae that composed the analysed meroplankton community (i.e. taxa that were present at more than 5% of the stations in both years) for 2004, 2005 and the 2 yr combined. MD = mean density (number of larvae per 100 m³); SE = standard error of mean density; %D = percentage of larval density; %O = percentage of occurrence. Realm (pelagic or benthic) and habitat (oceanic or neritic) of the adults is also included (d'Udekem d'Acoz 1999, Moreno et al. 2009, Torres et al. 2011)

Group	Taxon	Realm	Habitat	2004				2005				2004-2005			
				MD	SE	%D	%O	MD	SE	%D	%O	MD	SE	%D	%O
Fish	<i>Arnoglossus</i> spp.	Benthic	Neritic	0.54	0.13	0.16	31.51	0.22	0.07	0.09	17.50	0.37	0.08	0.13	24.18
	<i>Auxis rochei</i>	Pelagic	Oceanic	4.52	1.15	1.37	64.38	4.88	1.92	2.04	46.25	4.71	1.14	1.67	54.90
	<i>Benthosema glaciale</i>	Pelagic	Oceanic	1.16	0.35	0.35	34.25	3.28	0.84	1.37	58.75	2.27	0.48	0.80	47.06
	<i>Callionymus</i> spp.	Benthic	Neritic	0.06	0.03	0.02	6.85	0.06	0.03	0.03	7.50	0.06	0.02	0.02	7.19
	<i>Cepola rubescens</i>	Benthic	Neritic	0.14	0.06	0.04	12.33	0.37	0.13	0.16	16.25	0.26	0.07	0.09	14.38
	<i>Ceratoscopelus maderensis</i>	Pelagic	Oceanic	68.46	5.95	20.70	100	33.69	2.68	14.10	98.75	50.28	3.45	17.79	99.35
	<i>Chromis chromis</i>	Benthic	Neritic	1.45	0.39	0.44	36.99	1.42	0.52	0.59	36.25	1.43	0.33	0.51	36.60
	<i>Coris julis</i>	Benthic	Neritic	0.91	0.23	0.27	34.25	0.90	0.29	0.38	28.75	0.90	0.19	0.32	31.37
	<i>Cyclothona</i> spp.	Pelagic	Oceanic	115.81	11.79	35.02	100	68.94	5.44	28.86	100	91.30	6.56	32.30	100
	<i>Diaphus holti</i>	Pelagic	Oceanic	0.72	0.14	0.22	42.47	0.05	0.02	0.02	8.75	0.37	0.07	0.13	24.84
	<i>Diplodus</i> spp.	Benthic	Neritic	0.06	0.04	0.02	4.11	0.04	0.02	0.02	5.01	0.05	0.02	0.02	4.58
	<i>Engraulis encrasicolus</i>	Pelagic	Neritic	1.12	0.33	0.34	26.03	2.03	0.47	0.85	42.50	1.60	0.29	0.57	34.64
	<i>Evermannella balbo</i>	Benthic	Oceanic	0.11	0.04	0.03	13.70	0.06	0.03	0.03	7.50	0.08	0.02	0.03	10.46
	Gobiidae	Benthic	Neritic	1.22	0.53	0.37	24.66	0.32	0.22	0.13	10	0.75	0.28	0.26	16.99
	<i>Hygophum</i> spp.	Pelagic	Oceanic	64.01	9.40	19.36	98.63	43.41	5.03	18.17	97.50	53.24	5.25	18.84	98.04
	<i>Lampanyctus crocodilus</i>	Pelagic	Oceanic	7.63	1.37	2.31	93.15	9.15	0.95	3.83	91.25	8.43	0.82	2.98	92.16
	<i>Lampanyctus pusillus</i>	Pelagic	Oceanic	7.08	0.94	2.14	84.93	4.11	0.43	1.72	85	5.53	0.52	1.96	84.97
	<i>Lestidiops</i> spp.	Pelagic	Oceanic	1.63	0.21	0.49	71.23	1.04	0.13	0.44	61.25	1.32	0.12	0.47	66.01
	<i>Lobianchia dofleini</i>	Pelagic	Oceanic	0.14	0.05	0.04	12.33	0.20	0.05	0.09	21.25	0.17	0.04	0.06	16.99
	<i>Mullus</i> spp.	Benthic	Neritic	0.28	0.09	0.09	19.18	0.17	0.05	0.07	17.50	0.22	0.05	0.08	18.30
	<i>Myctophum punctatum</i>	Pelagic	Oceanic	1.37	0.37	0.42	50.68	0.96	0.17	0.40	47.50	1.16	0.20	0.41	49.02
	<i>Notoscopelus</i> spp.	Pelagic	Oceanic	0.01	0.01	0.00	1.37	0.09	0.03	0.04	13.75	0.05	0.01	0.02	7.84
	Ophididae	Benthic	Oceanic	0.02	0.02	0.01	2.74	0.12	0.06	0.05	8.75	0.08	0.03	0.03	5.88
	<i>Pagrus pagrus</i>	Benthic	Neritic	0.07	0.03	0.02	8.22	0.22	0.12	0.09	6.25	0.15	0.06	0.05	7.19
	Paralepididae	Pelagic	Oceanic	1.83	0.34	0.55	65.75	2.51	0.28	1.05	80	2.18	0.22	0.77	73.20

	<i>Sardinella aurita</i>	Pelagic	Neritic	1.49	0.97	0.45	12.33	4.74	1.56	1.98	23.75	3.19	0.94	1.13	18.30
	<i>Scorpaena</i> spp.	Benthic	Neritic	0.03	0.02	0.01	3.74	0.05	0.02	0.02	6.25	0.04	0.02	0.01	5.10
	<i>Seriola durmerilii</i>	Benthic	Neritic	0.06	0.05	0.02	4.89	0.03	0.01	0.01	5.42	0.04	0.02	0.02	5.08
	<i>Serranus</i> spp.	Benthic	Neritic	0.60	0.17	0.18	26.03	1.33	0.44	0.56	31.25	0.98	0.25	0.35	28.76
	<i>Sparidae</i>	Benthic	Neritic	0.37	0.18	0.11	13.70	0.01	0.01	0.00	1.25	0.18	0.09	0.06	7.19
	<i>Spicara smaris</i>	Benthic	Neritic	1.94	1.28	0.59	10.96	0.95	0.66	0.40	5.01	1.42	0.70	0.50	7.84
	<i>Stomias</i> <i>boa</i>	Pelagic	Oceanic	0.25	0.05	0.08	30.14	0.46	0.09	0.19	41.25	0.36	0.05	0.13	35.95
	<i>Symbolophorus veranyi</i>	Pelagic	Oceanic	0.37	0.08	0.11	27.40	1.88	0.83	0.79	61.25	1.16	0.44	0.41	45.10
	<i>Thunnus alalunga</i>	Pelagic	Oceanic	1.62	0.37	0.49	42.47	2.54	0.51	1.06	68.75	2.10	0.32	0.74	56.21
	<i>Thunnus thynnus</i>	Pelagic	Oceanic	2.46	1.71	0.74	27.40	0.47	0.21	0.20	18.75	1.42	0.82	0.50	22.88
	<i>Trachinus draco</i>	Benthic	Neritic	0.32	0.11	0.10	15.07	0.29	0.11	0.12	15	0.31	0.08	0.11	15.03
	<i>Trachurus</i> spp.	Benthic	Neritic	1.73	0.61	0.52	38.36	1.63	0.58	0.68	31.25	1.68	0.42	0.59	34.64
	<i>Vinciguerria attenuata</i>	Pelagic	Oceanic	6.46	1.11	1.95	78.08	3.48	0.34	1.46	88.75	4.90	0.57	1.73	83.66
Crustaceans	<i>Alpheus</i> spp.	Benthic	Oceanic	1.69	0.46	0.51	39.73	5.08	1.16	2.13	61.25	3.46	0.66	1.22	50.98
	<i>Anapagurus</i> spp.	Benthic	Neritic	0.58	0.31	0.17	10.96	1.73	1.01	0.72	5.01	1.18	0.55	0.42	7.84
	<i>Aristeus antennatus</i>	Benthic	Oceanic	0.01	0.01	0.00	3.37	0.07	0.03	0.03	7.50	0.04	0.02	0.01	5.58
	<i>Athanas nitescens</i>	Benthic	Neritic	0.19	0.13	0.06	9.59	0.48	0.24	0.20	12.50	0.34	0.14	0.12	11.11
	<i>Brachyura</i> spp.	Benthic	Oceanic	0.06	0.03	0.02	6.85	0.02	0.01	0.01	3.75	0.04	0.01	0.01	5.23
	<i>Calcinus tubularis</i>	Benthic	Neritic	0.40	0.32	0.12	12.33	1.55	0.40	0.65	53.75	1.00	0.26	0.35	33.99
	<i>Callianassa</i> spp.	Benthic	Neritic	0.03	0.03	0.01	2.74	0.05	0.02	0.02	7.50	0.04	0.02	0.01	5.23
	<i>Clibanarius erythropus</i>	Benthic	Neritic	0.14	0.04	0.04	17.81	0.07	0.02	0.03	12.50	0.10	0.02	0.04	15.03
	<i>Ebalia</i> spp.	Benthic	Oceanic	1.13	0.28	0.34	38.36	0.30	0.08	0.13	26.25	0.70	0.14	0.25	32.03
	<i>Eualus</i> spp.	Benthic	Neritic	0.21	0.14	0.06	9.59	4.35	3.06	1.82	15	2.38	1.60	0.84	12.42
	<i>Eusergestes arcticus</i>	Pelagic	Oceanic	3.73	0.89	1.13	69.86	1.96	0.39	0.82	50	2.80	0.47	0.99	59.48
	<i>Galathea</i> spp.	Benthic	Neritic	1.21	0.72	0.36	19.18	1.37	1.05	0.57	10	1.29	0.64	0.46	14.38
	<i>Gennadas elegans</i>	Pelagic	Oceanic	0.60	0.17	0.18	31.51	1.02	0.23	0.43	43.75	0.82	0.15	0.29	37.91
	<i>Geryon longipes</i>	Benthic	Oceanic	0.02	0.01	0.01	2.74	0.07	0.02	0.03	12.50	0.05	0.01	0.02	7.84
	<i>Goneplax rhomboides</i>	Benthic	Oceanic	0.22	0.18	0.07	5.48	0.34	0.15	0.14	11.25	0.28	0.12	0.10	8.50
	<i>Ilia nucleus</i>	Benthic	Oceanic	2.07	1.12	0.63	24.66	0.63	0.18	0.26	31.25	1.32	0.54	0.47	28.10
	<i>Liocarcinus</i> spp.	Benthic	Oceanic	1.12	0.44	0.34	24.66	0.67	0.32	0.28	17.50	0.89	0.27	0.31	20.92
	<i>Lysmata seticaudata</i>	Benthic	Neritic	0.02	0.01	0.01	4.11	0.32	0.08	0.13	26.25	0.18	0.04	0.06	15.69
	<i>Monodaeus couchii</i>	Benthic	Oceanic	0.01	0.01	0.00	1.37	0.17	0.05	0.07	20	0.09	0.03	0.03	11.11
	<i>Munida</i> spp.	Benthic	Oceanic	0.08	0.03	0.03	10.96	0.02	0.02	0.01	2.50	0.05	0.02	0.02	6.54
	<i>Pachygrapsus</i> spp.	Benthic	Neritic	0.18	0.06	0.05	17.81	0.34	0.07	0.14	33.75	0.26	0.05	0.09	26.14
	<i>Pagurus</i> spp.	Benthic	Oceanic	0.28	0.14	0.08	9.59	0.42	0.22	0.18	13.75	0.35	0.13	0.12	11.76

	<i>Palaemon</i> spp.	Benthic	Neritic	0.05	0.03	0.02	5.48	0.12	0.03	0.05	16.25	0.09	0.02	0.03	11.11
	Pandalidae	Benthic	Oceanic	0.82	0.18	0.25	43.84	0.37	0.16	0.15	20	0.59	0.12	0.21	31.37
	<i>Parasergestes vigilax</i>	Pelagic	Oceanic	3.23	0.48	0.98	84.93	7.67	5.54	3.21	75	5.55	2.90	1.96	79.74
	<i>Parthenope</i> spp.	Benthic	Oceanic	1.19	0.45	0.36	36.99	0.59	0.12	0.25	35	0.88	0.22	0.31	35.95
	<i>Pilumnus</i> spp.	Benthic	Oceanic	0.05	0.02	0.01	5.48	0.16	0.06	0.07	12.50	0.11	0.03	0.04	9.15
	<i>Plesionika</i> spp.	Benthic	Oceanic	0.37	0.10	0.11	27.40	0.89	0.29	0.37	33.75	0.64	0.16	0.23	30.72
	Poliibinae	Benthic	Oceanic	0.03	0.02	0.01	3.74	0.07	0.04	0.03	6.25	0.05	0.02	0.02	5.58
	Pontoninae	Benthic	Neritic	0.06	0.04	0.02	5.48	0.16	0.04	0.07	17.50	0.12	0.03	0.04	11.76
	<i>Processa</i> spp.	Benthic	Oceanic	1.30	0.54	0.39	32.88	2.99	1.38	1.25	38.75	2.18	0.77	0.77	35.95
	<i>Scyllarus</i> spp.	Benthic	Neritic	0.13	0.04	0.04	16.44	0.14	0.05	0.06	15	0.13	0.03	0.05	15.69
	<i>Sergestes</i> spp.	Pelagic	Oceanic	6.51	0.76	1.97	90.41	3.11	0.41	1.30	88.75	4.74	0.44	1.68	89.54
	<i>Sergia robusta</i>	Pelagic	Oceanic	0.38	0.16	0.12	23.29	0.81	0.18	0.34	38.75	0.61	0.12	0.21	31.37
	<i>Solenocera membranacea</i>	Benthic	Oceanic	0.17	0.10	0.05	8.22	0.75	0.33	0.31	25	0.47	0.18	0.17	16.99
	<i>Stenopus spinosus</i>	Benthic	Oceanic	0.02	0.01	0.01	3.74	0.07	0.04	0.03	6.25	0.05	0.02	0.02	5.58
	<i>Thoralus</i> spp.	Benthic	Neritic	0.41	0.20	0.12	17.81	0.40	0.39	0.17	2.50	0.40	0.22	0.14	9.80
	<i>Xantho</i> spp.	Benthic	Neritic	3.83	1.27	1.16	54.79	2.78	0.73	1.16	56.25	3.28	0.71	1.16	55.56
Cephalopods	Octopodidae	Benthic	Neritic	0.01	0.01	0.00	2.74	0.06	0.02	0.03	10	0.04	0.01	0.01	6.54
	Ommastrephidae	Pelagic	Oceanic	0.04	0.02	0.01	5.48	0.39	0.07	0.17	42.50	0.23	0.04	0.08	24.84
	Onychoteuthidae	Pelagic	Oceanic	0.03	0.02	0.01	4.11	0.20	0.05	0.08	22.50	0.12	0.03	0.04	13.73

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