



SUPPLEMENTARY MATERIAL



References

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Malačič, V., Petelin, B., Gačić, M., Artegiani, A., Orlić, M.: Regional Studies. In: Cushman-Roisin, B., Gačić, M., Poulain, PM., Artegiani, A. (eds) *Physical Oceanography of the Adriatic Sea*. Springer, Dordrecht. pp. 167–177, DOI: https://doi.org/10.1007/978-94-015-9819-4_6, 2001.

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Leoni, V., Molinero, J. C., Meffre, M., Bonnet, D.: Variability of growth rates and thermohaline niches of *Rhizostoma pulmo*'s pelagic stages (Cnidaria: Scyphozoa). *Marine Biology*, 168, 107, DOI: <https://doi.org/10.1007/s00227-021-03914-y>, 2021b.

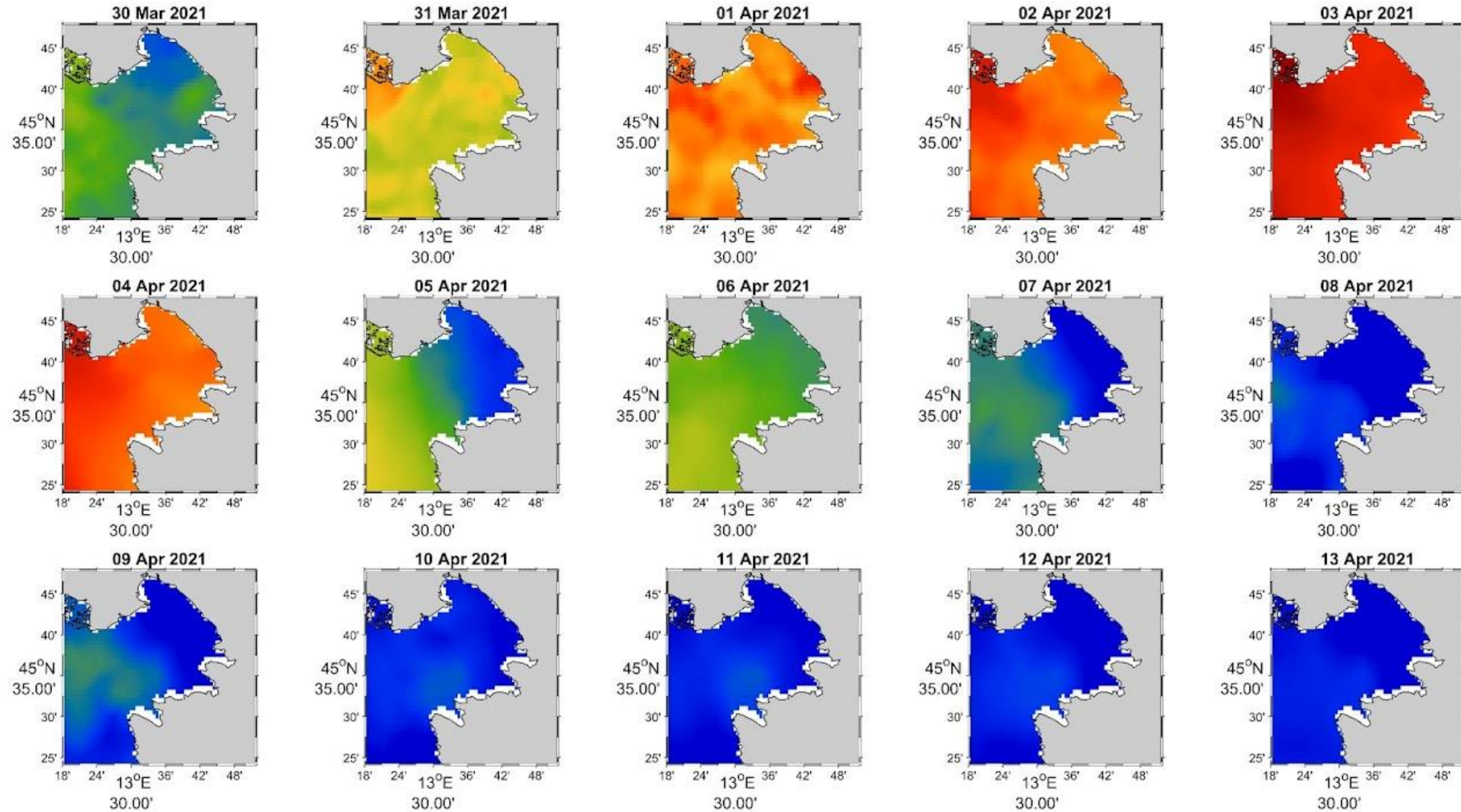


MULTI-PLATFORM PHYSICAL DATASET

	HFR	SATELLITE	ALADIN	CMEMS, MFS	ECMWF, ERA5	VIDA BUOY	MAMBO1 BUOY	CTD ARPA FVG
Variable	SSC	SST	Wind speed	7 levels of SSC, S and θ	Net surface heat flux	Wind speed and T	T	25 levels of T and S
Temporal resolution	30 min	Daily	Hourly	Hourly	Hourly	30 min	Hourly	~Bi-monthly
Spatial resolution	1.5 km	1/16°	4.4 km	4 km	1/4°	Fixed point	Fixed point	Fixed point
Vertical integration	Surface	Surface	10 m asl	L1 = ~1 m to L7 = ~29.9 m	Surface	10 m asl, 3m bsl and 22 m bsl	2m bsl and 15m bsl	L1 = surface to L25 = ~25 m bsl
Analysed period	20 Mar - 20 Apr 2021	1 Jan - 31 May 2021	20 Mar - 20 Apr 2021	20 Mar - 20 Apr 2021	20 Mar - 20 Apr 2021	20 Mar - 20 Apr 2021	25 Mar-20 Apr 2021	1 Jan 2008 - 09 Jun 2020

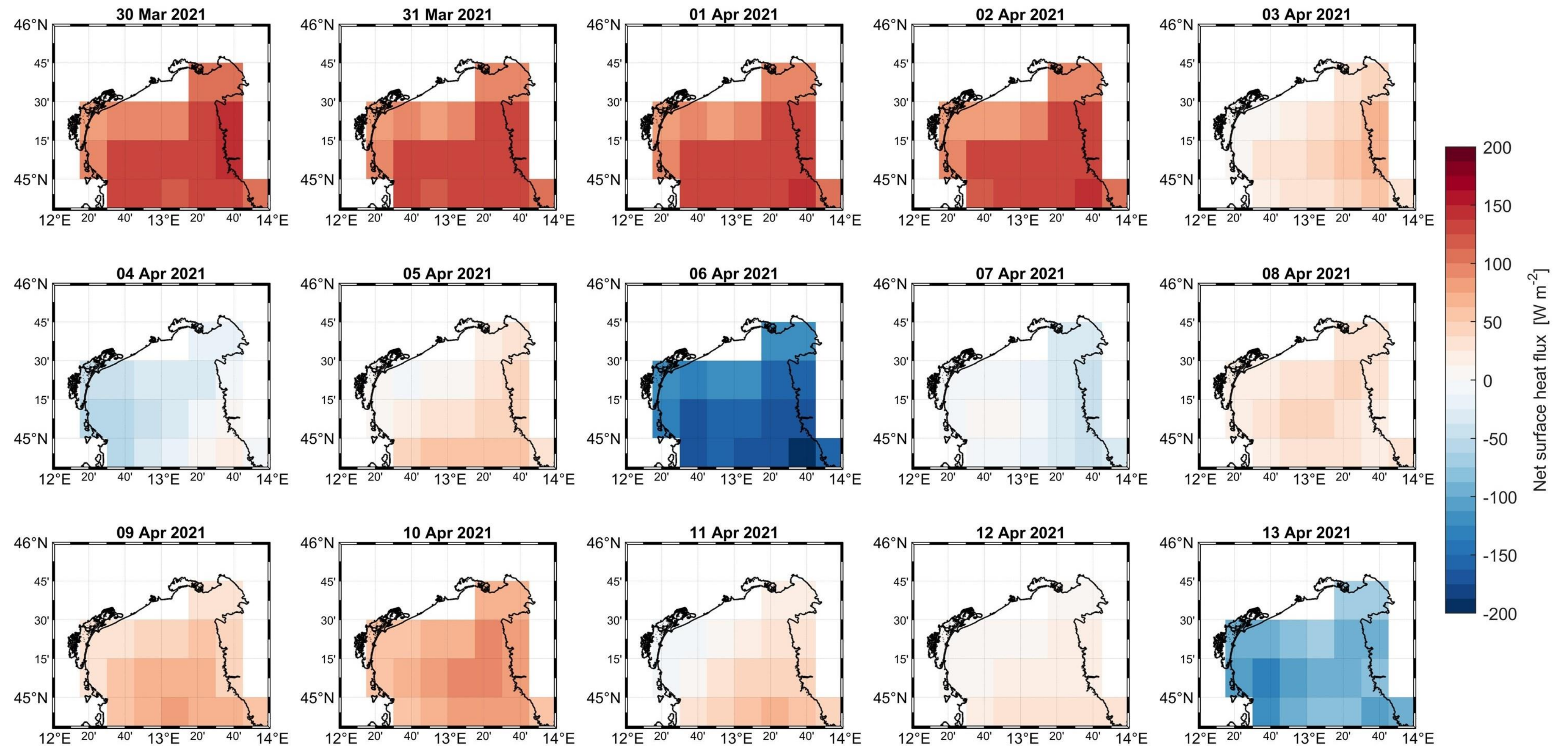


SST





Spatial distribution of daily averaged net surface heat fluxes





Linear regression statistics

Season	<i>Slope</i> ($^{\circ}\text{C year}^{-1}$)	<i>Standard Error</i>	<i>p-value</i>	r^2
Winter	0.1042	0.0148	1.4572×10^{-11}	0.1460
Spring	0.0935	0.0263	0.0005	0.0415
Summer	0.0071	0.0331	0.8297	0.0002
Autumn	0.0232	0.0168	0.1695	0.0070

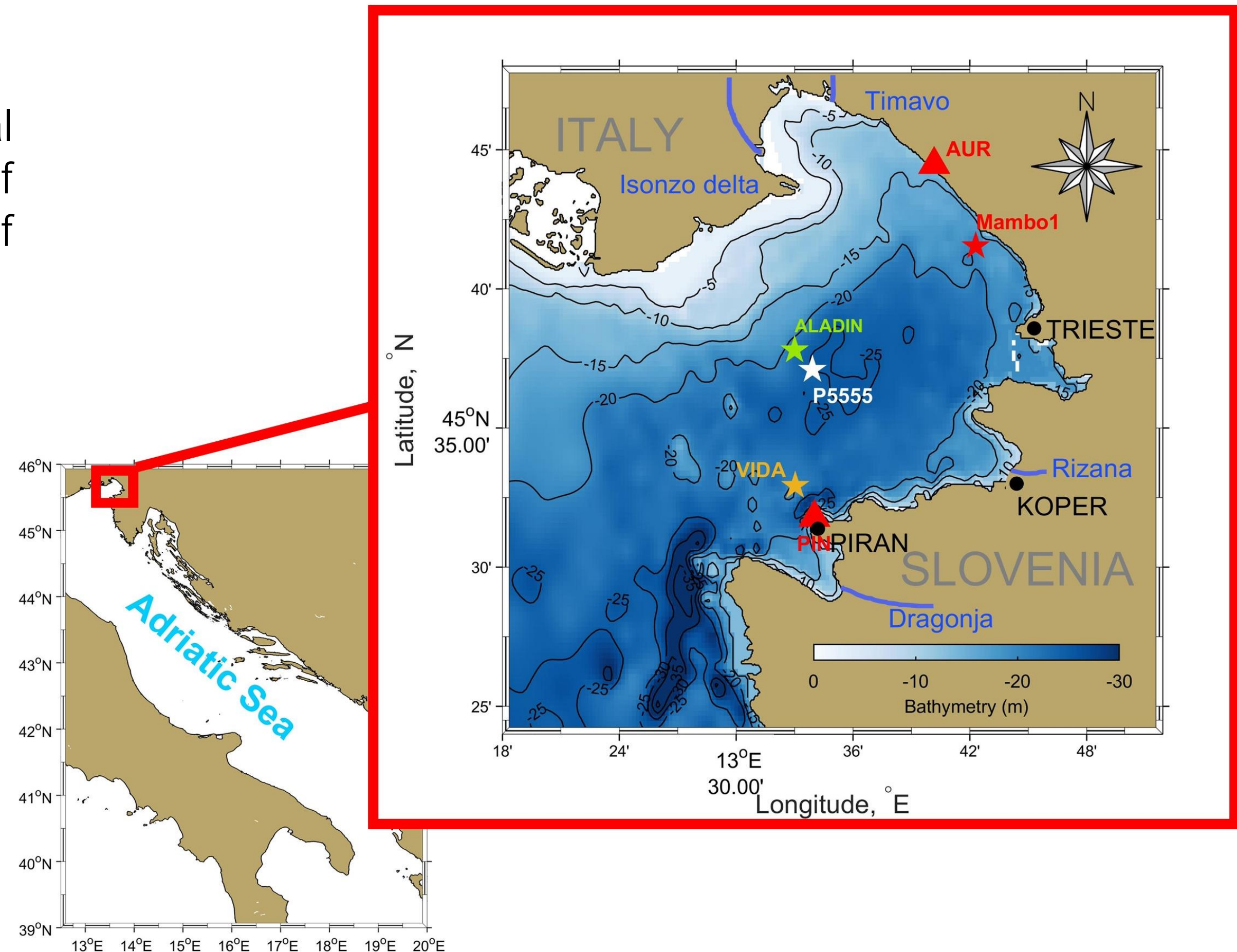


GoT- The Gulf of Trieste

It is a mid latitude semi-enclosed marginal basin situated in the northern-most part of the Adriatic sea between the countries of Italy and Slovenia.

It is mainly influenced by:

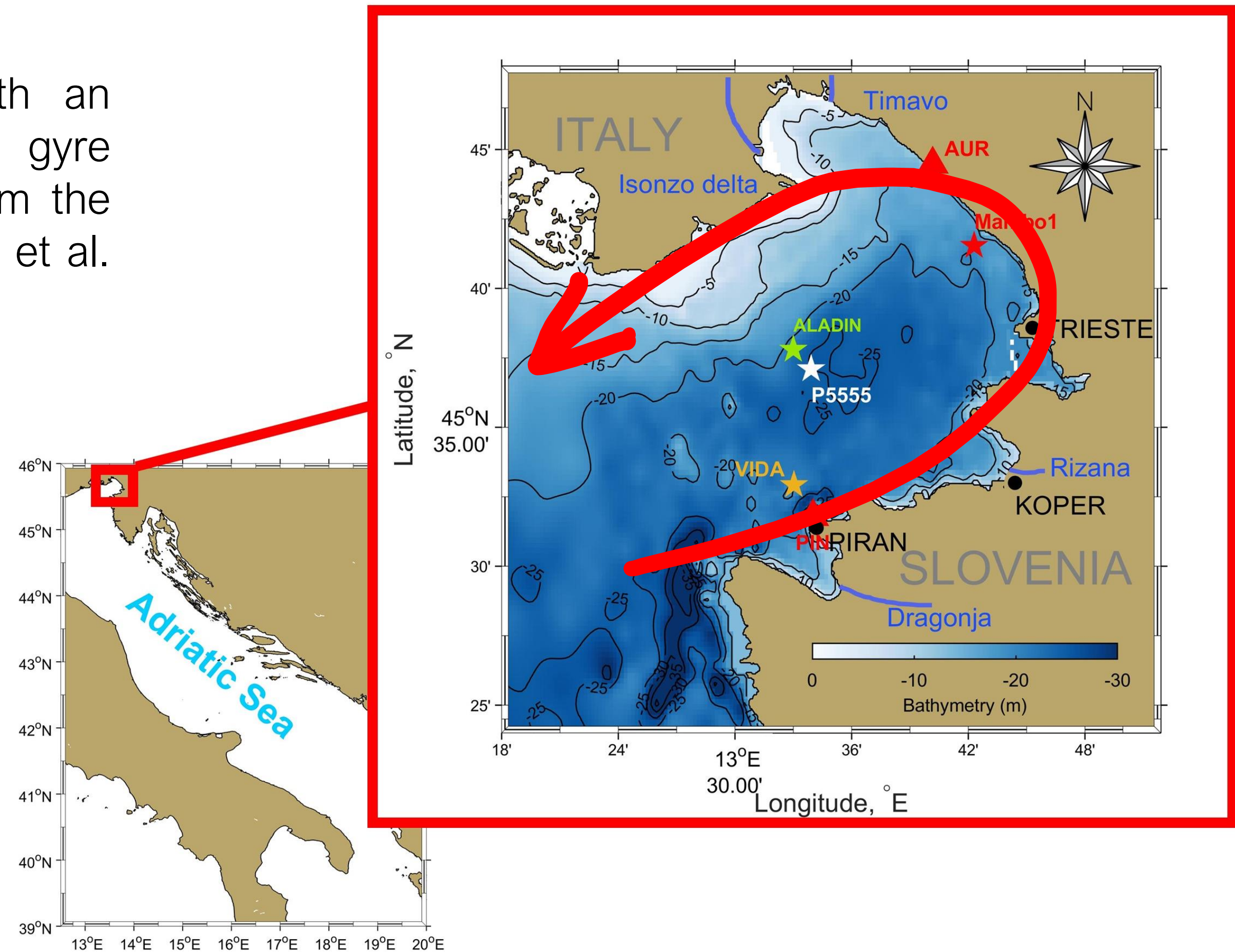
- Tides, especially the semidiurnal frequency band
- Inertial and near-inertial oscillations
- Winds s.a Bora and Scirocco
- River discharge





GoT- The Gulf of Trieste

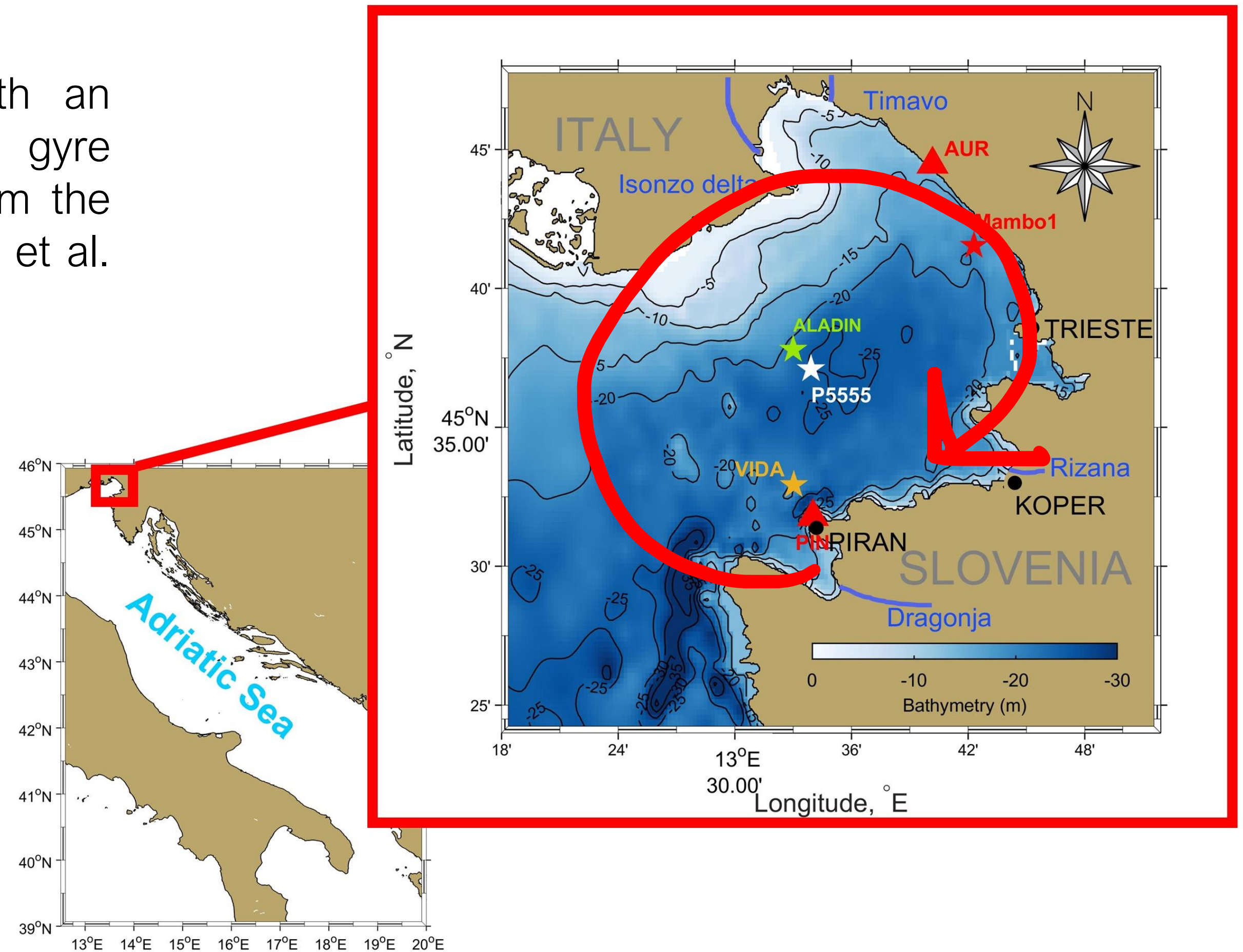
The circulation is mostly cyclonic with an occasionally sub-basin anticyclonic gyre enhanced as the freshwater input from the Isonzo river in the GoT increases (Cosoli et al. 2013; Querin et al. 2021).





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In winter, the water column is mixed, while in spring intensified freshwater inputs and warming of the surface layer together contribute to stratification which increases even more in summer (Malačič and Petelin, 2001).

We used the available dataset in order to look at the sea conditions during and before the *R. pulmo* bloom.

