

# Are sunscreen UV filters polluting our beaches? A case study from consumer habits to water analysis on the French Mediterranan Coast Coauthors

Jérôme Labille, Danielle L. Slomberg, Riccardo Catalano, Olivier Radakovitch, Samuel Robert, Marie-Laure Trémélo, Jean Luc Boudenne, Manasfi Tarik

### ▶ To cite this version:

Jérôme Labille, Danielle L. Slomberg, Riccardo Catalano, Olivier Radakovitch, Samuel Robert, et al.. Are sunscreen UV filters polluting our beaches? A case study from consumer habits to water analysis on the French Mediterranan Coast Coauthors. International Symposium of LabEx DRIIHM, Sep 2021, Toulouse, France., 2021, 10.34972/driihm-12a97c. hal-03373825

HAL Id: hal-03373825

https://hal.science/hal-03373825

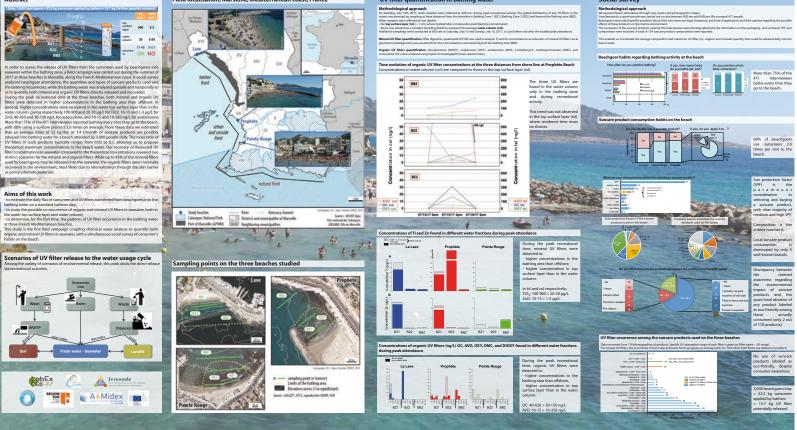
Submitted on 11 Oct 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers. L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



## Are sunscreen UV filters polluting our beaches?

## A case study from consumer habits to water analysis on the French Mediterranan Coast



#### Coauthors.

érôme Labille, Danielle Slomberg, Riccardo Catalano, Olivier Radakovitch

amuel Robert, Marie-Laure Apers-Tréméle

Aix-Marseille Université / CNRS, ESPACE, UMR 7300, Aix-en-Provence, France

lean-Luc Boudenne, Tarik Manasf

Aix-Marseille Université / Laboratoire Chimie de l'Environnement, UMR 7376, Marseille, Fra

#### redicted environmental concentrations of UV filters

Methodological approach
From the mass of UV filter consumed on the beach recovered from our surevey, we calculated a predicted environmental concentration in the bat

that make depairs associated and posterior for a first source product consumed and posterior for a battlery native posterior consumed and posterior for a source product consumed and posterior for a

#### mass of Wilher involved $\longrightarrow m_{\phi \gamma i} = W_{\phi \gamma i}$ , $\phi_{\phi \gamma i}$ , $m_{manow}$

accuracy of the CV filter in Mills of the paper of the CV filter		Mary 201	Mon
of ancarpolat conjustion and and othe polar femalation (i.i.)	embrason	2,669	845
Mass of UV filters consumed and potentially entering the bathing	water beneticised	2,119	671
in o/day:	actoryless	1,990	600
organic UV filter > 1 kg/d	ortisalate	1,799	566
ZnO and TiO2 = 83 and 633 g/d	edylogi stanne	1,346	427
cumulated UV filters = 15.7 kg/d	bonosáste	1,073	310
This quantity of UV filters may be released or remain on the	skin. Titili	477	200
depending on the retention factor.	200	10	26
There welves a server for a broady deller strandeness of 2 000 months	Total mass	15.742	4,962

Index-toward constitute $ H_{Eq} : \theta_{Eq} : \Gamma \\ \text{towards the bridge passe} $ with the trib the bridge passes $ H_{Eq} : \theta_{Eq} : \Gamma \\ towards the same and the$	UV filter i	%	m <sub>pm</sub> /g	PEC M 1991	Con /Jgs.	recovery/ ?
	TiO <sub>2 set</sub>	17	251	46	21	45.5
	inn TiO <sub>2 M</sub>			5,300	117-895	16.8
	ZnO <sub>sat</sub>	3 44		8	2.4	13.4
	ZnO w		**	938	11	0.6
	AVO out	80	1,181	217	0.3	0.14
	AVO M			25,000	0.015-0.048	0
	d oc	57	842	154	0.03	0.02
	v oc∞			17,800	0.04-0.14	0
		17	251	46	0	0
				5,300	0	0









