



CIESM C2 COMMITTEE - Physics and Climate of the Ocean

Mediterranean Water Masses Acronyms

In July 2022 the C2 Chair sent around a questionnaire to potentially interested scientists, in order to assess whether the existing list of Acronyms for Mediterranean Water Masses that CIESM published in 2001 (<https://ciesm.org/online/archives/WaterMassAcronyms.pdf>) needed a revision and an update. Broad discussions among the respondents of the questionnaire occurred during two hybrid meetings (26th August 2022 and 5th October 2022), and the group of participants (see list in Annex 1) agreed on the following acronyms for the Mediterranean water masses.

Agreed acronyms for Mediterranean water masses

Acronym	Full name	Type	Distribution	Notes
AW	<u>A</u> tlantic <u>W</u> ater	Surface	Mediterranean Sea	enters the Mediterranean through the Gibraltar Strait, shows a near surface salinity minimum, is gradually modified along its basin-wide path
LSW	<u>L</u> evantine <u>S</u> urface <u>W</u> ater	Surface	Eastern Mediterranean Sea	is a summertime strongly modified surface water by evaporation, shows a near surface salinity maximum, and can coexist with AW in the same profile
BSW	<u>B</u> lack <u>S</u> ea <u>W</u> ater	Surface	Aegean Sea	enters the Mediterranean through the Dardanelles and comes from the Black Sea, shows a near surface salinity minimum
LIW	<u>L</u> evantine <u>I</u> ntermediate <u>W</u> ater	Intermediate	Eastern Mediterranean Sea	forms in the Levantine basin (Rhodes Gyre area) by intermediate water convection, shows a salinity maximum at intermediate depths
CIW	<u>C</u> retan <u>I</u> ntermediate <u>W</u> ater	Intermediate	Eastern Mediterranean Sea	forms in the Cretan Sea by shelf cascading and/or intermediate water convection, shows a salinity maximum at intermediate depths
EIW	<u>E</u> astern <u>I</u> ntermediate <u>W</u> ater	Intermediate	Mediterranean Sea	generic name for intermediate waters formed in the Eastern Mediterranean Sea (LIW and/or CIW). This term should be used when generically referring to, and without distinguishing them, LIW and CIW. Can be used in the



				WMED, but also in the EMED, in all cases in which it is not possible or not of interest to distinguish between LIW and CIW.
WIW	<u>W</u> estern <u>I</u> ntermediate <u>W</u> ater	Intermediate	Western Mediterranean Sea	forms in the north-western Mediterranean by intermediate water convection, shows a temperature minimum at intermediate depths
WMDW	<u>W</u> estern <u>M</u> editerranean <u>D</u> eep <u>W</u> ater	Deep	Western Mediterranean Sea	forms in the north-western Mediterranean mainly by deep water convection, episodically by shelf dense water cascading
EMDW	<u>E</u> astern <u>M</u> editerranean <u>D</u> eep <u>W</u> ater	Deep	Eastern Mediterranean Sea	results from different areas in the Eastern Mediterranean Sea where deep water convection and shelf dense water cascading occur
CDW	<u>C</u> retan <u>D</u> eep <u>W</u> ater	Deep	Eastern Mediterranean Sea	forms in the Cretan Sea by shelf cascading and/or deep water convection, becomes part of the bulk EMDW
TDW	<u>T</u> yrrhenian <u>D</u> eep <u>W</u> ater	Deep	Tyrrhenian Sea	is a mixing product between EIW, EOW and WMDW
NAddW	<u>N</u> orth <u>A</u> driatic <u>d</u> ense <u>W</u> ater	dense	Adriatic Sea	to replace NAddW, it is a dense water formed by shelf convection in the northern Adriatic Sea, characterized by very low temperatures, can contribute to the bulk EMDW
AddW	<u>A</u> driatic <u>D</u> eep <u>W</u> ater	Deep	Adriatic Sea	to replace ADW, it is formed by deep convection in the southern Adriatic Sea, becomes part of the bulk EMDW
NAeDW	<u>N</u> orth <u>A</u> egean <u>D</u> eep <u>W</u> ater	Deep	Aegean Sea	forms in the northern Aegean Sea by shelf cascading, can contribute to the bulk EMDW
LDW	<u>L</u> evantine <u>D</u> eep <u>W</u> ater	Deep	Levantine Sea	forms in the Levantine basin (Rhodes Gyre area) by deep water convection, becomes part of the bulk EMDW
EOW	<u>E</u> astern <u>M</u> editerranean <u>O</u> verflow <u>W</u> ater	Overflow	Sicily Channel and Tyrrhenian Sea	generic term to indicate the EIW+upper part of EMDW that crosses the Sicily Channel cascading into the Tyrrhenian Sea
MOW	<u>M</u> editerranean <u>O</u> verflow <u>W</u> ater	Overflow	Atlantic	bulk of the water masses exiting through the Gibraltar Strait and cascading into the Gulf of Cadiz



The participants also revised the set of rules that govern the designation of water mass acronyms in the Mediterranean Sea.

Set of rules adopted for the acronyms of Mediterranean Water Masses

- 1) The first letters, up to three, of the acronym will indicate the name of the location where the water mass is formed. This will be an abbreviation of a geographical name. Other types of features, like eddies, should be avoided. The abbreviation may contain, optionally, lower case letters.
- 2) Next will be a single letter indicating the level. The only letters accepted here are: "S", "I", "D" or "d" for Surface, Intermediate, Deep or dense layers, respectively; in addition "O" will indicate "water overflowing" at sills. In cases where no confusion is possible, this letter will be missing.
- 3) The single letter "W", to signal the acronym of a water mass.
- 4) There cannot be two different water masses with the same acronym.

Katrin Schroeder
Moderator and C2 Committee Chair



Annex 1

List of participants:

Name	Affiliation	Email
Ben Ismail Sana	INSTM, Carthage, Tunisia	sana.benismail@instm.mrt.tn
Bensi Manuel	OGS, Trieste, Italy	mbensi@ogs.it
Bosse Anthony	MIO-CNRS, Mediterranean Institute of Oceanography	anthony.bosse@mio.osupytheas.fr
Chiggiato Jacopo	CNR ISMAR, Venezia, Italy	jacopo.chiggiato@ismar.cnr.it
Civitaresse Giuseppe	OGS, Trieste, Italy	gcivitaresse@ogs.it
Falcieri Francesco M.	CNR ISMAR, Venezia, Italy	francesco.falcieri@cnr.it
Fusco Giannetta	University of Naples Parthenope	giannetta.fusco@uniparthenope.it
Miroslav Gačić	OGS, Trieste, Italy	mgacic@ogs.it
Gertman Isaac	Israel Oceanographic & Limnological Research	isaac@ocean.org.il
Kubin Elisabeth	OGS, Trieste, Italy	ekubin@ogs.it
Malanotte-Rizzoli Paola	Massachusetts Institute of Technology	rizzoli@mit.edu
Martellucci Riccardo	OGS, Trieste, Italy	rmartellucci@ogs.it
Menna Milena	OGS, Trieste, Italy	mmenna@ogs.it
Ozer Tal	Israel Oceanographic & Limnological Research	tal@ocean.org.il
Schroeder Katrin	CNR ISMAR, Venezia, Italy	katrin.schroeder@ismar.cnr.it
Taupier-Letage Isabelle	MIO-CNRS/AMU/IRD/UTLN , La Seyne, France	isabelle.taupier-letage@mio.osupytheas.fr
Vargas Yáñez Manuel	IEO-CSIC, Spain	manolo.vargas@ieocsic.es
Velaoras Dimitris	HCMR, Anavyssos, Greece	dvelaoras@hcmr.gr
Vilibić Ivica	RBI, Zagreb, Croatia	ivica.vilbic@irb.hr