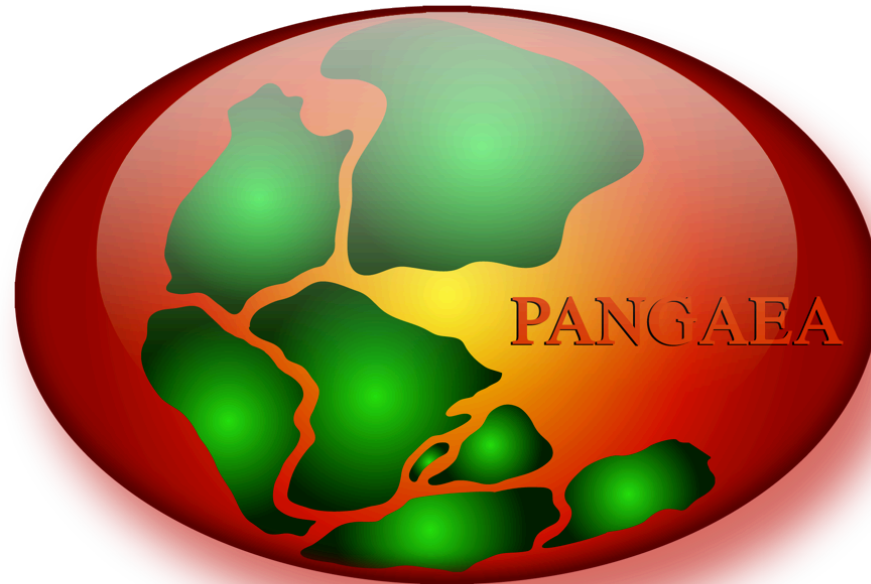
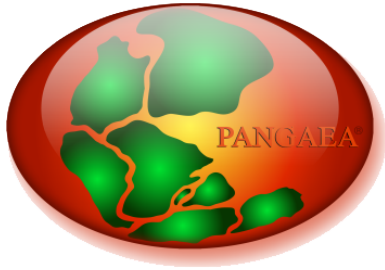


PANGAEA® -
more than 20 years serving the earth science community with
data archiving and publication



Stefanie Schumacher, Amelie Driemel, Hannes Grobe, Rainer Sieger
[hdl:10013/epic.45879](https://hdl.handle.net/10013/epic.45879)



What is PANGAEA[®] ?

- Pangaea is an **open access data library** for **earth system research**.
- Data are stored **georeferenced** in space and time in a relational database and a tape archive.
- Datasets have a **citation** and a **DOI**
- The data content is accessible on the **internet** via a search engine, a data warehouse and web services.
- The system is open to **any** scientist or project to archive and publish data.


PANGAEA hosts




Both institutions have committed to long-term operate PANGAEA

Data model

numerical

16 
B. dilatata [#]
178
17
4

text

3 
Lithology
Aleuritic clay
Aleuritic clay
Nannofossil clays

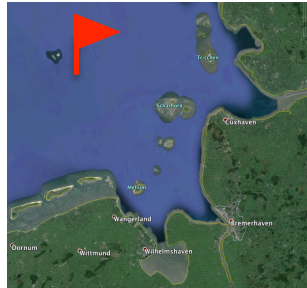
object



Data model



where?

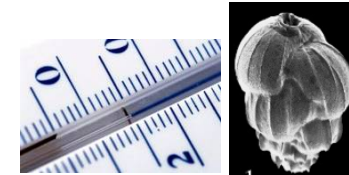


when?



Epoch / Era	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
Quaternary	Holocene	Upper	▲	present
		Middle		0.126
	Pleistocene	Calabrian	▲	0.781
		Gelasian	▲	1.806
Pliocene	Piacenzian	▲	2.588	
	Zanclean	▲	3.600	

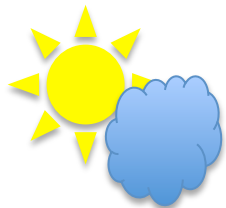
what?



Date/Time or geol. Age

Parameter [unit]

Latitude/Longitude



Air



Ice

Water

Sediment

numerical

text

object

16	B. dilatata [#]
	178
	17
	4

3	Lithology
	Aleuritic clay
	Aleuritic clay
	Nannofossil clays



who?



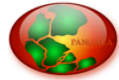
Investigator/Reference

how?



Method

Data in PANGAEA



PANGAEA®
Data Publisher for Earth & Environmental Science

Logged in as [sschumacher](#) (log out, profile)

Always quote citation when using data!

Data Description

[Show Map](#) [Google Earth](#) [RIS](#) [BibTeX](#)

Citation:

Leduc, G et al. (2015): Salinity estimation from Gulf of Guinea, sediment core MD03-2707 [doi:10.1594/PANGAEA.849518](https://doi.org/10.1594/PANGAEA.849518)
Supplement to: Leduc, Guillaume; Sachs, Julian P; Kawka, Orest E; Schneider, Ralph R (2013): Holocene changes in eastern equatorial Atlantic salinity as estimated by water isotopologues. *Earth and Planetary Science Letters*, **362**, 151-162, [doi:10.1016/j.epsl.2012.12.003](https://doi.org/10.1016/j.epsl.2012.12.003)

Abstract:

The isotopic composition of surface seawater is widely used to infer past changes in sea surface salinity using paired foraminiferal Mg/Ca and d18O from marine sediments. At low latitudes, paleosalinity reconstructions using this method have largely been used to document changes in the hydrological cycle. This method usually assumes that the modern seawater d18O (d18Osw)/salinity relationship remained constant through time. Modelling studies have shown that such assumptions may not be valid because large-scale atmospheric circulation patterns linked to global climate changes can alter the seawater d18Osw/salinity relationship locally. Such processes have not been evidenced by paleo-data so far because there is presently no way to reconstruct past changes in the seawater d18Osw/salinity relationship. We have addressed this issue by applying a multi-proxy salinity reconstruction from a marine sediment core collected in the Gulf of Guinea. We measured hydrogen isotopes in C37:2 alkenones (dDa) to estimate changes in seawater dD. We find a smooth, long-term increase of ~10 per mil in dDa between 10 and 3 kyr BP, followed by a rapid decrease of ~10 per mil in dDa between 3 kyr BP and core top to values slightly lighter than during the early Holocene. Those features are inconsistent with published salinity estimations based on d18Osw and foraminiferal Ba/Ca, as well as nearby continental rainfall history derived from pollen analysis. We combined dDa and d18Osw values to reconstruct a Holocene record of salinity and compared it to a Ba/Ca-derived salinity record from the same sedimentary sequence. This combined method provides salinity trends that are in better agreement with both the Ba/Ca-derived salinity and the regional precipitation changes as inferred from pollen records. Our results illustrate that changes in atmospheric circulation can trigger changes in precipitation isotopes in a counter-intuitive manner that ultimately impacts surface salinity estimates based on seawater isotopic values. Our data suggest that the trends in Holocene rainfall isotopic values at low latitudes may not uniquely result from changes in local precipitation associated with the amount effect.



Related to:

Weldeab, Syee; Lea, David W; Schneider, Ralph R; Andersen, Nils (2007): 155,000 Years of West African Monsoon and Ocean Thermal Evolution. *Science*, **316(5829)**, 1303-1307, [doi:10.1126/science.1140461](https://doi.org/10.1126/science.1140461)

Coverage:

Latitude: 2.502000 * *Longitude:* 9.395000

Minimum Elevation: -1295.0 m * *Maximum Elevation:* -1295.0 m

Event(s):

MD03-2707 * *Latitude:* 2.502000 * *Longitude:* 9.395000 * *Elevation:* -1295.0 m * *Device:* Piston corer (PC)

Comment:

The dataset includes deuterium measurements performed on C37:2 alkenones. These measurements, jointly with seawater d18O estimates previously published in Weldeab et al.(2007), are jointly used to derive sea surface salinity using the isotopologues method as described in Rohling (2007).

Parameter(s):

#	Name	Short Name	Unit	Principal Investigator	Method	Comment
1	<input type="checkbox"/> AGE	Age	ka BP	Leduc, Guillaume		Geocode
2	<input type="checkbox"/> Alkenone C37:2, d2H	C37:2 d2H	per mil SMOW	Leduc, Guillaume	Gas chromatography - Isotope ratio mass spectrometer (GC-IRMS)	
3	<input type="checkbox"/> delta Deuterium, standard deviation	d2H std dev	±	Leduc, Guillaume	Gas chromatography - Isotope ratio mass spectrometer (GC-IRMS)	
4	<input type="checkbox"/> Sea surface salinity	SSS		Leduc, Guillaume	SSS calculated from d18O and d2H (Rohling, 2007)	
5	<input type="checkbox"/> Salinity, standard error	Sal std e	±	Leduc, Guillaume	SSS calculated from d18O and d2H (Rohling, 2007)	

License:

Creative Commons Attribution 3.0 Unported

Size:

112 data points

Data

Download dataset as tab-delimited text (use the following character encoding:)

1	2	3	4	5
Age [ka BP]	C37:2 d2H [per mil SMOW]	d2H std dev [±]	SSS	Sal std e [±]
0.240	-209.6	0.9	30.00	5.56
0.470	-204.6	4.1	25.45	5.43
1.000	-200.3	4.0	21.27	5.02

PANGAEA linked with Elsevier

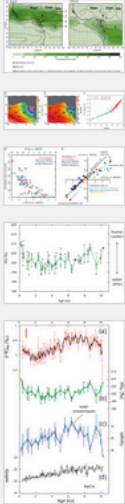


Download PDF Export Search ScienceDirect Advanced search

Article outline Show full outline

Abstract
Keywords
1. Introduction
2. Background on Holocene paleoclima...
3. Modern climatology and its impact o...
4. Methods
5. Results
6. Discussion
7. Conclusions
Acknowledgements
References

Figures and tables



Earth and Planetary Science Letters
Volume 362, 15 January 2013, Pages 151–162

Holocene changes in eastern equatorial Atlantic salinity as estimated by water isotopologues

Guillaume Leduc^a, Julian P. Sachs^b, Orest E. Kawka^b, Ralph R. Schneider^a

Show more

doi:10.1016/j.epsl.2012.12.003 Get rights and content

Abstract

The isotopic composition of surface seawater is widely used to infer past changes in sea surface salinity using paired foraminiferal Mg/Ca and $\delta^{18}\text{O}$ from marine sediments. At low latitudes, paleosalinity reconstructions using this method have largely been used to document changes in the hydrological cycle. This method usually assumes that the modern seawater $\delta^{18}\text{O}$ ($\delta^{18}\text{O}_{\text{sw}}$)/salinity relationship remained constant through time. Modelling studies have shown that such assumptions may not be valid because large-scale atmospheric circulation patterns linked to global climate changes can alter the seawater $\delta^{18}\text{O}_{\text{sw}}$ /salinity relationship locally. Such processes have not been evidenced by paleo-data so far because there is presently no way to reconstruct past changes in the seawater $\delta^{18}\text{O}_{\text{sw}}$ /salinity relationship. We have addressed this issue by applying a multi-proxy salinity reconstruction from a marine sediment core collected in the Gulf of Guinea. We measured hydrogen isotopes in $\text{C}_{37:2}$ alkenones (δD_a) to estimate changes in seawater δD . We find a smooth, long-term increase of $\sim 10\text{‰}$ in δD_a between 10 and 3 kyr BP, followed by a rapid decrease of $\sim 10\text{‰}$ in δD_a between 3 kyr BP and core

Recommended articles



- Native versus exotic community patterns across t...**
2012, Perspectives in Plant Ecology, Evolution and Syste... more
- A global compilation of coral sea-level benchmark...**
2013, Earth and Planetary Science Letters more
- Calcium carbonate veins in ocean crust record a t...**
2013, Earth and Planetary Science Letters more

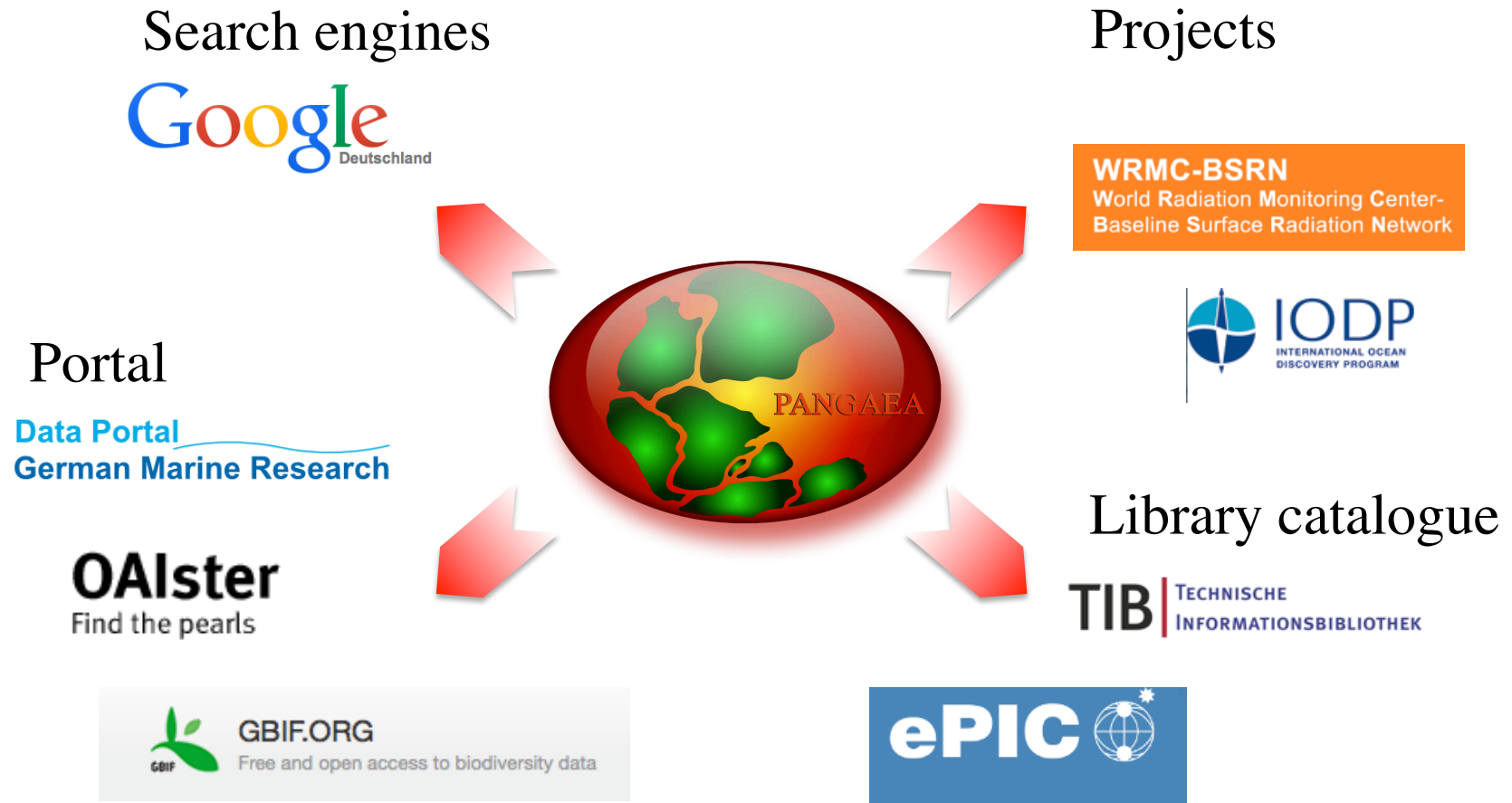
View more articles »

Citing articles (3)

Related book content

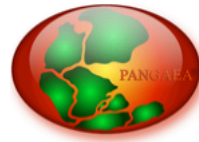
PANGAEA® – Related Data
Salinity estimation from Gulf of Guinea, sediment core MD03-2707





PANGAEA®

Data Publisher for Earth & Environmental Science



[All](#) [Water](#) [Sediment](#) [Ice](#) [Atmosphere](#)

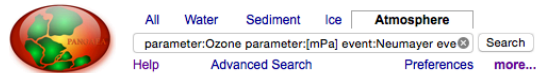
[Help](#) [Advanced Search](#) [Preferences](#) [more...](#)

[About](#) - [Submit Data](#) - [Projects](#) - [Software](#) - [Contact](#)

Data Compilation



Data search: www.pangaea.de



2579 datasets found on search for »parameter:Ozone parame...« in atmosphere

Your query requires all search terms to be in the results, but produced no hits. Because of this, the behaviour was changed to show a ranked list

<< PREV | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | NEXT >>

1. **König-Langlo, G (2007): Radiosonde measurements from Neumayer Station (1999-03)**

Size: 105462 data points
doi:10.1594/PANGAEA.674435 - Score: 100% - Similar datasets

2. **König-Langlo, G (2007): Radiosonde measurements from Neumayer Station (1999-03)**

Size: 124002 data points
doi:10.1594/PANGAEA.674411 - Score: 100% - Similar datasets



PANGAEA®
Data Publisher for Earth & Environmental Science

Logged in as [sschumacher](#) (log out, profile)

Always quote citation when using data!

Data Description

Citation: König-Langlo, Gert (2007): Radiosonde measurements from Neumayer Station (1999-03). *Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research, Bremerhaven*, doi:10.1594/PANGAEA.674435

Other version: König-Langlo, Gert (1999): BSRN Station-to-archive file for Neumayer station (1999-03). <ftp://ftp.bsm.awi.de/gvn/gvn0399.dat.gz>

Project(s): Baseline Surface Radiation Network (BSRN)

Coverage: Latitude: -70.650000 * Longitude: -8.250000
Date/Time Start: 1999-03-01T09:31:00 * Date/Time End: 1999-03-31T09:33:00
Minimum ALTITUDE: 42.0 m * Maximum ALTITUDE: 38042.0 m

Event(s): GVN (Georg von Neumayer) * Latitude: -70.650000 * Longitude: -8.250000 * Date/Time: 1992-01-01T00:00:00 * Elevation: 42.0 m * Location: Dronning Maud Land, Antarctica * Campaign: WCRP/GEWEX * Device: Monitoring station (MONS) * Comment: BSRN station no: 13; Surface type: ice shelf; Topography type: flat, rural; Horizon from 1992 to 2009-01: doi:10.1594/PANGAEA.669516; Horizon after 2009-01: doi:10.1594/PANGAEA.757811; Station scientist: Gert König-Langlo (Gert.Koenig-Langlo@awi.de). Station description see hdl:10013/epic.28566.d001



#	Name	Short Name	Unit	Principal Investigator	Method	Comment
1	DATE/TIME	Date/Time				Geocode
2	ALTITUDE	Altitude	m			Geocode
3	Pressure, at given altitude	PPPP	hPa	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	
4	Temperature, air	TTT	°C	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	
5	Dewfrost point	TdTdTd	°C	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	
6	Wind direction	dd	deg	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	
7	Wind speed	ff	m/s	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	
8	Ozone	O3	mPa	König-Langlo, Gert	Radiosonde, Vaisala, DigiCor	

Size: 105462 data points

Data

Download dataset as tab-delimited text (use the following character encoding: x-MacRoman; Macintosh Roman)

Date/Time	Altitude [m]	PPPP [hPa]	TTT [°C]	TdTdTd [°C]	dd [deg]	ff [m/s]	O3 [mPa]
1999-03-01T09:31	42	987	-11.1	-14.2	86	8	
1999-03-01T09:31	99	979	-9.3	-16.0	81	9	
1999-03-01T09:31	138	974	-9.5	-16.2	77	10	
1999-03-01T09:31	175	970	-9.7	-16.8	73	10	
1999-03-01T09:31	215	965	-9.8	-16.9	70	10	
1999-03-01T09:31	255	960	-9.6	-17.8	67	10	
1999-03-01T09:31	297	955	-8.0	-17.3	65	9	

Data Compilation



Data search: www.pangaea.de

2579 datasets found on search for »parameter:Ozone parame...« in atmosphere

Your query requires all search terms to be in the results, but produced no hits. Because of this, the behaviour was changed to show a ranked list

<< PREV | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | NEXT >>

- König-Langlo, G (2007):** Radiosonde measurements from Neumayer Station (1999-03)
Size: 105462 data points
doi:10.1594/PANGAEA.674435 - Score: 100% - Similar datasets
- König-Langlo, G (2007):** Radiosonde measurements from Neumayer Station (1997-03)
Size: 124002 data points
doi:10.1594/PANGAEA.674411 - Score: 100% - Similar datasets

Data download: Data Warehouse

Logged in as **sschumacher** (log out, profile)

PANGAEA*
Data Publisher for Earth & Environmental Science

Always quote citation when using data!

Data Warehouse Download (BETA) on query for »parameter:Ozon parame...« in atmosphere

To start a data warehouse download, add geocodes (colored red/blue) and parameters to the configuration by dragging or double-clicking them. It is recommended to first choose a vertical geocode (colored red) to further reduce the list of available parameters. Order of geocodes and parameters in the download matrix may be changed by dragging rows in the configuration list. For best results put latitude/longitude in one of the first columns, as the download matrix is ordered by the primary geocode! Depending on size of result set, the query may take some time until file download starts.

Available Parameters and Geocodes

Score	Parameter/Geocode
	LATITUDE
	LONGITUDE
	DATE/TIME
	ALTITUDE [m]
	HEIGHT above ground [m]
	AGE [a B]
	ELEVATION [m a.s.l.]
100.0%	Temperature, air [°C]
97.5%	Wind speed [m/s]
97.3%	Wind direction [dir]
93.4%	Pressure, at given altitude [hPa]
76.9%	Humidity, relative [%]
21.9%	Dew/frost point [°C]
17.1%	Ozone [mPa]
6.2%	Pressure, atmospheric [hPa]

Configuration

Parameter/Geocode	Method
DATE/TIME	no average
ALTITUDE [m]	
Ozone [mPa]	<any>

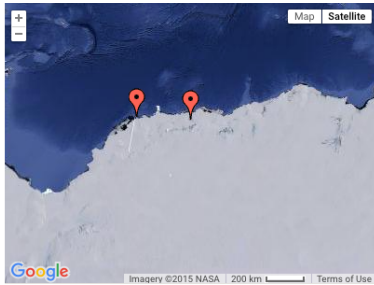
	A	B	C	D	E	F	G
1	Date/Time	Altitude [m]	O3 [mPa]	Origin of Values			
2	1985-05-22T05:19:00	130	1.3	http://doi.pangaea.de/10.1594/PANGAEA.510906			
3	1985-05-22T05:19:00	325	2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
4	1985-05-22T05:19:00	365	2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
5	1985-05-22T05:19:00	388	2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
6	1985-05-22T05:19:00	770	2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
7	1985-05-22T05:19:00	913	2.1	http://doi.pangaea.de/10.1594/PANGAEA.510906			
8	1985-05-22T05:19:00	1196	2.1	http://doi.pangaea.de/10.1594/PANGAEA.510906			
9	1985-05-22T05:19:00	1327	2.1	http://doi.pangaea.de/10.1594/PANGAEA.510906			
10	1985-05-22T05:19:00	1643	2.2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
11	1985-05-22T05:19:00	1689	2.2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
12	1985-05-22T05:19:00	1961	2.2	http://doi.pangaea.de/10.1594/PANGAEA.510906			
13	1985-05-22T05:19:00	2203	2.3	http://doi.pangaea.de/10.1594/PANGAEA.510906			
14	1985-05-22T05:19:00	2282	2.3	http://doi.pangaea.de/10.1594/PANGAEA.510906			
15	1985-05-22T05:19:00	2616	2.4	http://doi.pangaea.de/10.1594/PANGAEA.510906			
16	1985-05-22T05:19:00	2793	2.4	http://doi.pangaea.de/10.1594/PANGAEA.510906			
17	1985-05-22T05:19:00	2824	2.4	http://doi.pangaea.de/10.1594/PANGAEA.510906			

Data visualisation: ODV

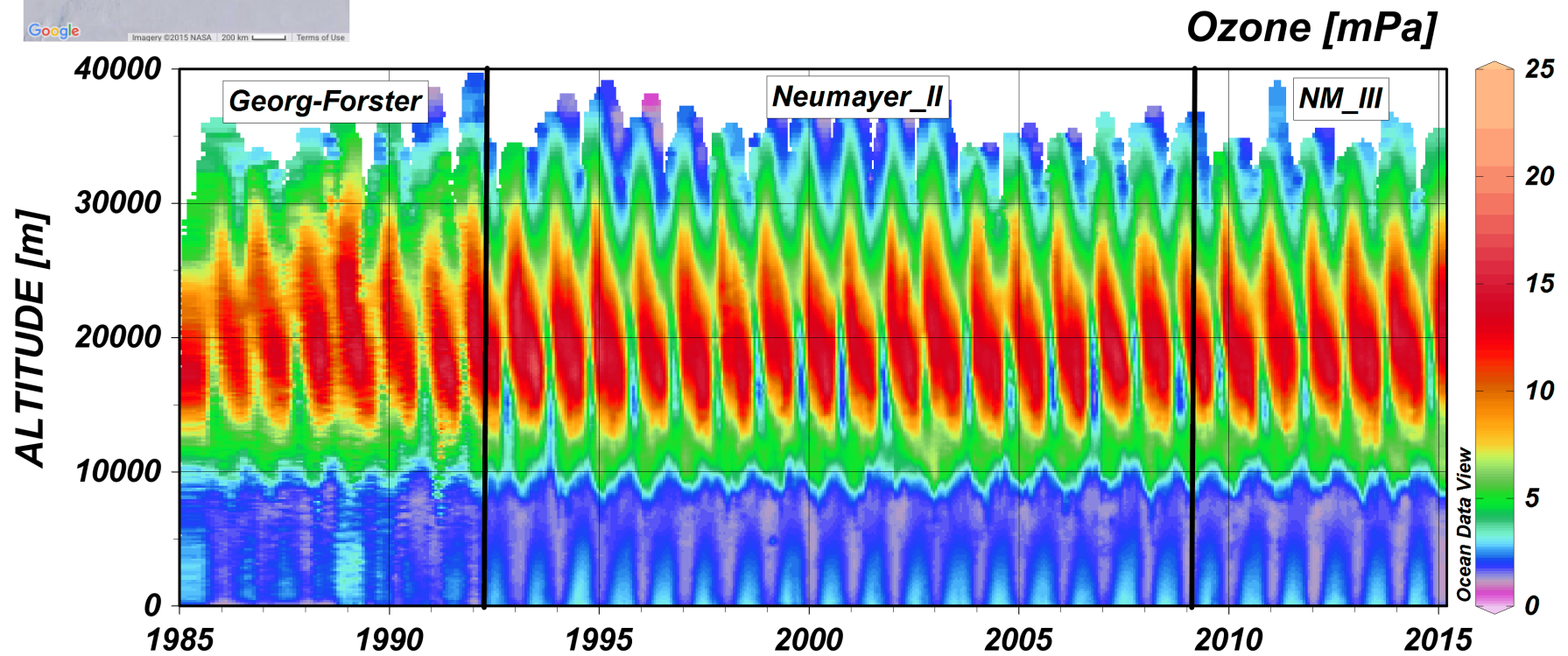


Schlitzer, R., Ocean Data View, <http://odv.awi.de>, 2015

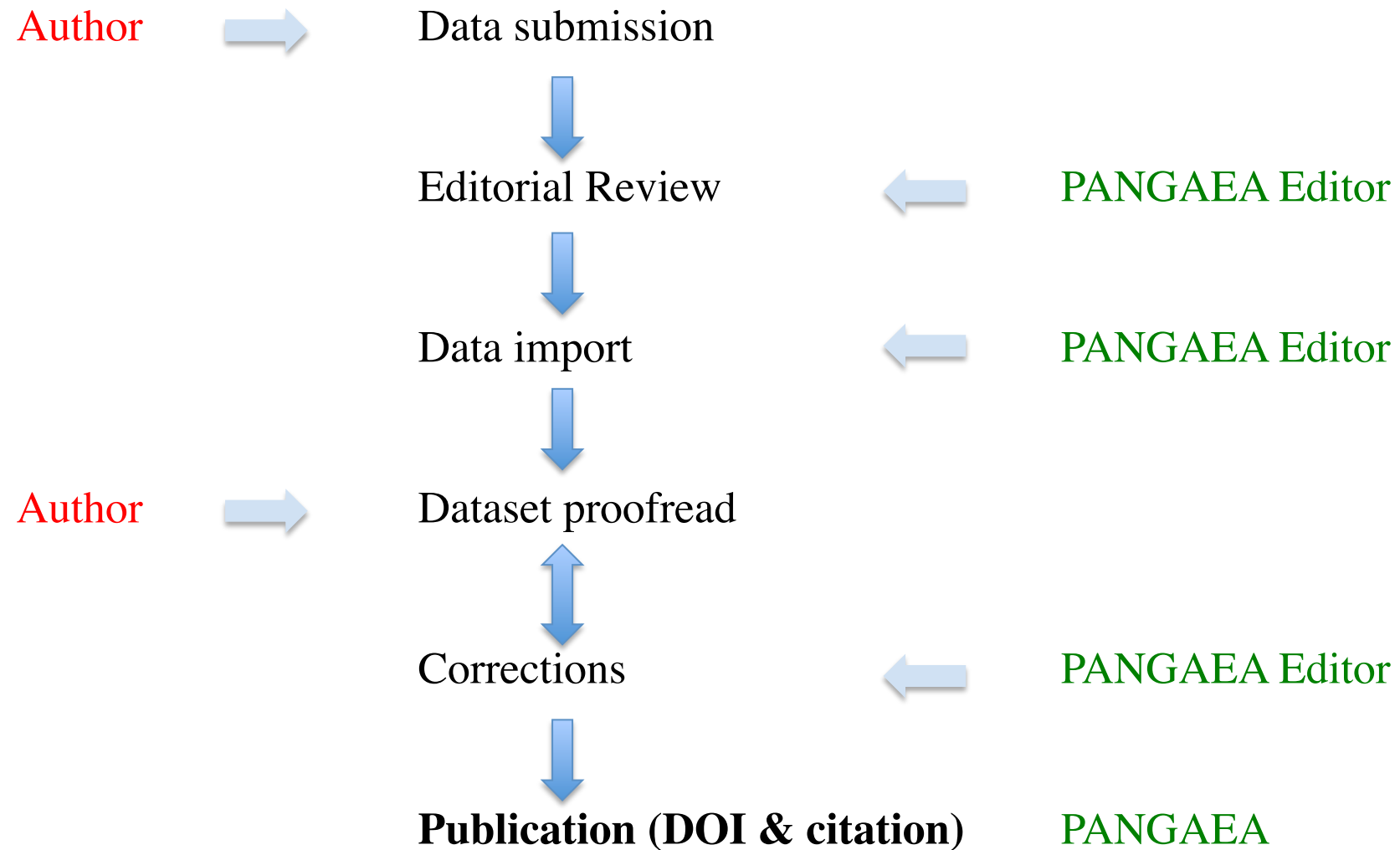
Data Compilation

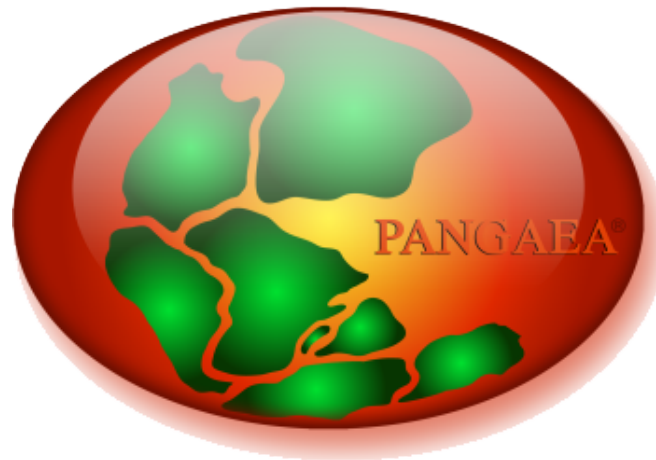


30-year record of Ozone



Data Publishing





www.pangaea.de

Thank You