

History of the participation to the Colloquium

Spatial analysis and time series

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1 Data acquisition

A dark room not far from here...



A dark room not far from here...



A dark room not far from here...

Collection in-8°
Sixième série

Année 1976
Tome X

SEVENTH LIÈGE COLLOQUIUM
ON
OCEAN HYDRODYNAMICS
CONTINENTAL SHELF DYNAMICS

University of Liège
May 5-9 1975

edited by

JACQUES C. J. NIHOUL

Nec temere, nec timide

Publié avec le concours de la *Fondation Universitaire de Belgique*,
de l'Université de Liège et

A dark room not far from here...

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Bonus: who is Florentina Mosora?



Film actress (before 1964)
Romanian and Belgian biophysicist
Participant at the CLQ in 1989

Data set

39 files with

Family name | First name (initials) | Affiliation | City | Country

Project	participant_1974.txt	participant_1975.txt	participant_1976.txt	participant_1977.txt	participant_1978.txt	participant_1979.txt
6	Boissier Chr.	Service Hydrographique et Océanographique de la Marine	Toulouse	France		
7	Brummell N.	Imperial College London	U.K.			
8	Carr M.E.	Dalhousie University	Halifax, Nova Scotia	Canada		
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10	Clement F.	Université de Liège	Liège	Belgium		
11	Dahl F.E.	Veritas Offshore Technology and Services	Veritec, Hovik	Norway		
12	Dauby P.	Université de Liège	Liège	Belgium		
13	Davies A.M.	Institute of Oceanographic Sciences	Birkenhead	U.K.		
14	Deleersnijder E.	Université de Liège	Liège	Belgium		
15	Desaubies Y.	IFREMER	Brest	France		
16	Djenidi S.	Université de Liège	Liège	Belgium		
17	Djurfeldt L.	University of Gothenburg	Gothenburg	Sweden		
18	Eifler W.	Commission of the European Communities	Ispira	Italy		
19	Everbecq E.	Université de Liège	Liège	Belgium		
20	Fedorov K.N.	Academy of Sciences USSR	Moscow	Russia		
21	Ferer K.M.	Naval Ocean Research and Development Activity, NSTL	Station Mississippi 39529			
22	Flebus C.	Commission of the European Communities	Ispira	Italy		
23	Foreman S.J.	Meteorological Office	Bracknell, Berkshire	U.K.		
24	Frankignoul C.	Université Pierre et Marie Curie	Paris	France		
25	Gargett A.E.	Institute of Ocean Sciences	Sidney, British Columbia	Canada		
26	Garret C.J.R.	Dalhousie University	Halifax, Nova Scotia	Canada		
27	Gaspar P.	Centre Nacional de la Recherche	Météorologique	Toulouse	France	
28	Gibson C.	University of California and San Diego	San Diego, California	U.S.A.		

A large, light gray number '2' is centered in the background. The top curve of the '2' is slightly open on the left side. The text 'Data processing' is overlaid on the '2'.

Data
processing

Examples of "countries"

Canary Islands

California

Caribe Colombiano ...

Non-stationarity of the name:

$$\frac{d(\text{participant name})}{dt} \neq 0 \quad (1)$$

B. Roisin → B. Cushman-Roisin?

Y. Runfola → Y. Rufola?

D. Salas de León → D. Salas?

Quality control

Encoding: first name becomes the name and *vice versa*

Leaf Thomas → Thomas Leaf?

Jean-Baptiste Philippe → Philippe Jean Baptiste?

ISO 3166

"Codes for the representation of names of countries and their subdivisions"

Russia → Russian Federation

Maroc → Morocco

Cameroun → Cameroon

Côte d'Ivoire → Ivory Coast

Serbia → Republic of Serbia

South Korea → Korea, Republic of

...

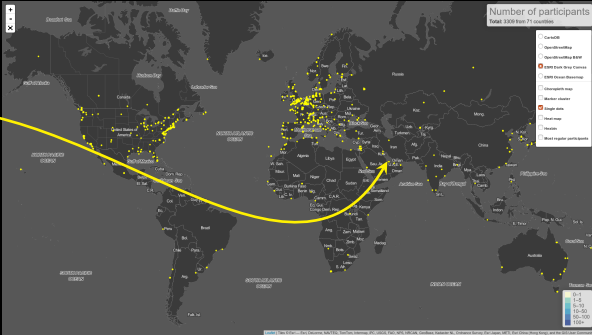
Anonymisation



Geolocation

Get coordinates
from

{
 Institute
 (*Address*)
 Town
 Country
}



A large, light gray number '3' is centered on a black background. The number is rendered in a clean, sans-serif font with a slight shadow effect.

Tools

 <https://github.com/gher-ulg/Liege-Colloquium-on-Ocean-Dynamics>

Python modules

<code>geopy</code>	geocoding web services
<code>pyshp</code>	reading shapefile format
<code>pycountry</code>	country list and iso codes
<code>haversine</code>	geodesic distance
<code>geolite2</code>	access to GeoIP2 databases

 [https:](https://github.com/gher-ulg/Liege-Colloquium-on-Ocean-Dynamics)

[//github.com/gher-ulg/Liege-Colloquium-on-Ocean-Dynamics](https://github.com/gher-ulg/Liege-Colloquium-on-Ocean-Dynamics)

Maps

Leaflet 

Leaflet

interactive maps



D3.js

data-driven documents



d3-hexbin

hexagonal binning

Time series

Highcharts

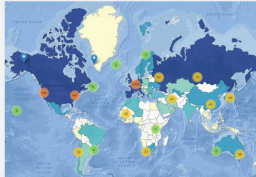
interactive charts

4 Results

Results: interactive maps and time series

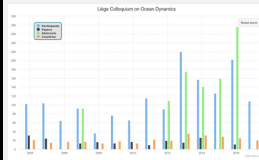
Participation map

Spatial distribution of the participants: [choropleth](#), [hexbin](#) and [heat](#) maps.



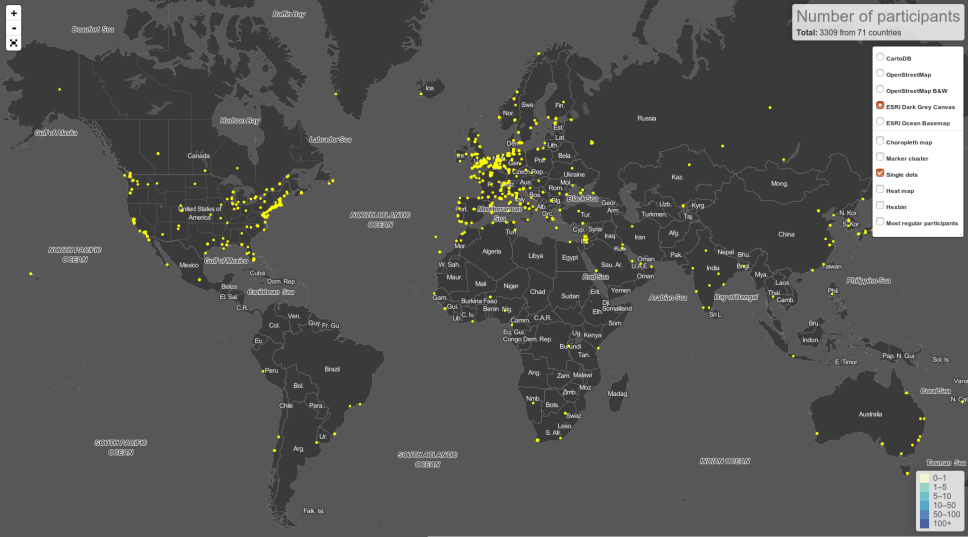
Time series

Time evolution of the number of participants, abstract submitted and paper published.





How many participants?





How many participants?

3309 (total)

Number of participants

Total: 3309 from 71 countries

- CartoDB
- OpenStreetMap
- OpenStreetMap B&W
- ESRI Dark Grey Canvas
- ESRI Ocean Basemap
- Choropleth map
- Marker cluster
- Single date
- Heat map
- Hexbin
- Most regular participants





How many participants?

3309 (total)
2420 (unique)

Number of participants

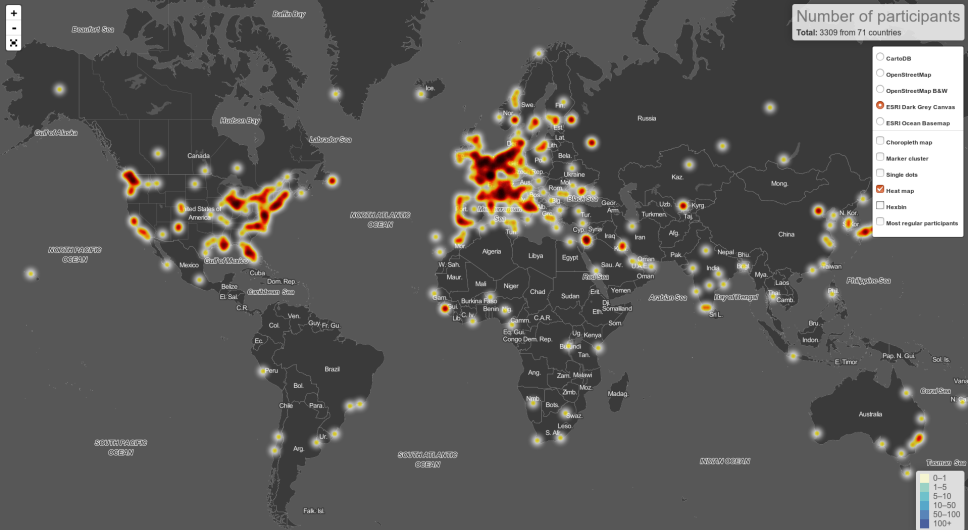
Total: 3309 from 71 countries

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- ESRI Dark Grey Canvas
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- Choropleth map
- Marker cluster
- Single date
- Heat map
- Hexbin
- Most regular participants

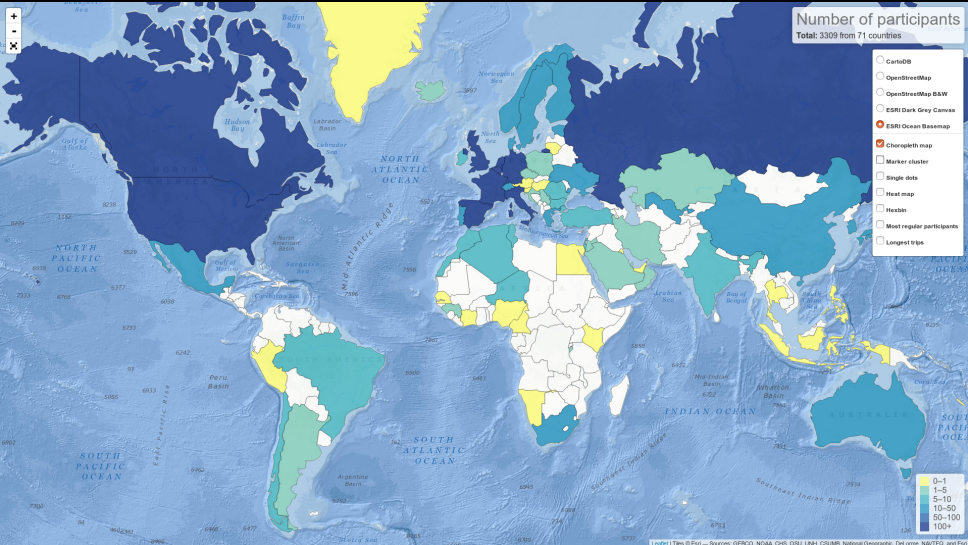




How many participants?



Country of origin?



Country of origin?

71 different countries

Number of participants
Total: 3309 from 71 countries

- CartoDB
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- OpenStreetMap B&W
- ESRI Dark Grey Canvas
- ESRI Ocean Basemap
- Choropleth map
- Marker cluster
- Single data
- Heat map
- Hexbin
- Most regular participants
- Longest trips



Country of origin?

71 different countries
500 × U.S.A

Number of participants
Total: 3309 from 71 countries

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- Most regular participants
- Longest trips



🌍 Country of origin?

71 different countries
500 × U.S.A
441 × France

Number of participants
Total: 3309 from 71 countries

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- Longest trips



🌐 Country of origin?

71 different countries

500 × U.S.A

441 × France

309 × U.K.

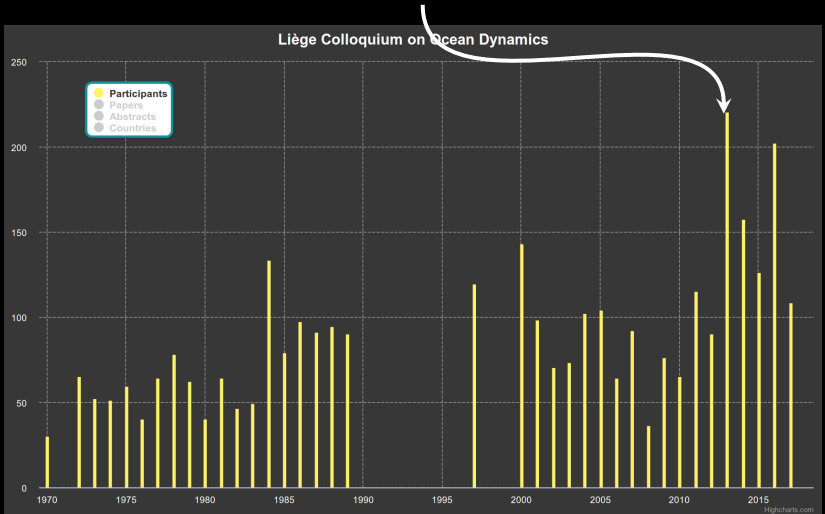
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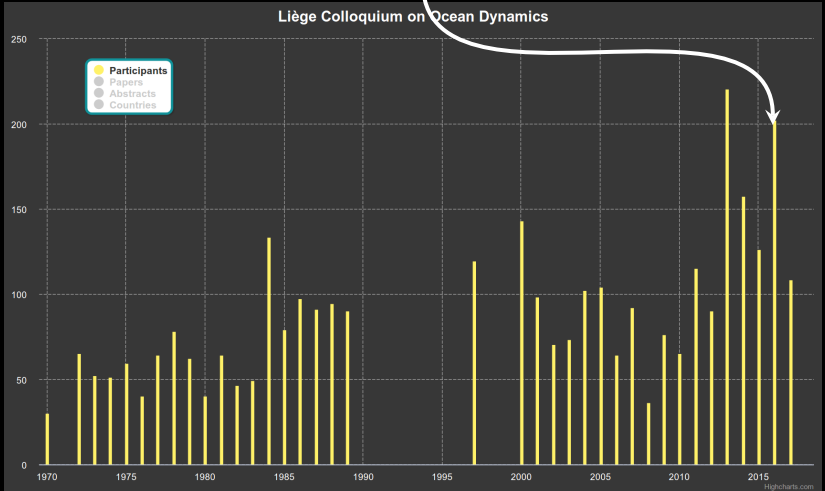
Most attended editions?

2013 "Primary production in the ocean" 220



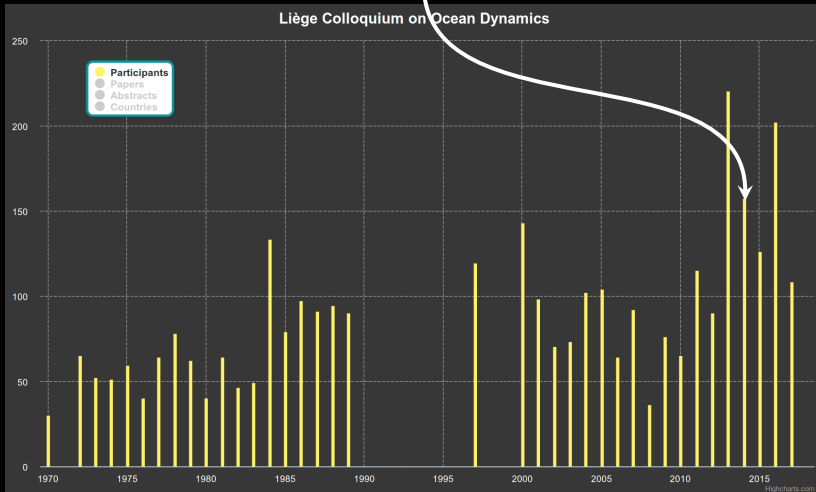
Most attended editions?

2016 "Submesoscale Processes" 202



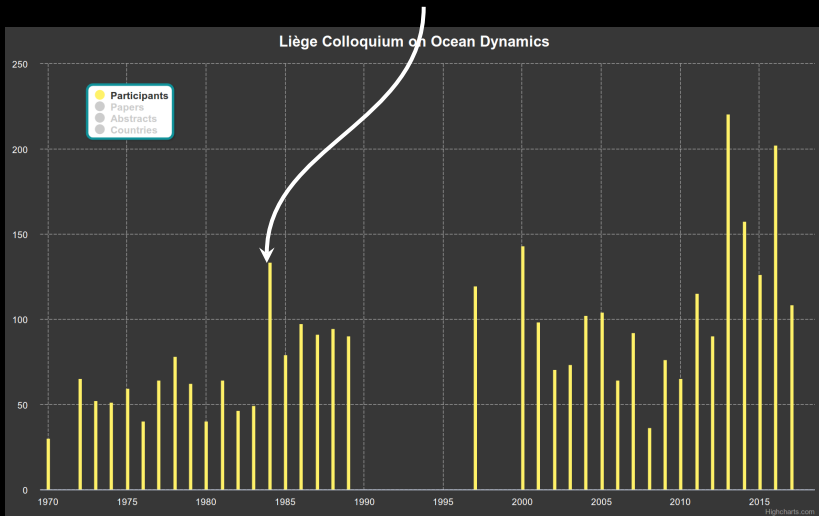
Most attended editions?

2014 "Low oxygen environments" 157



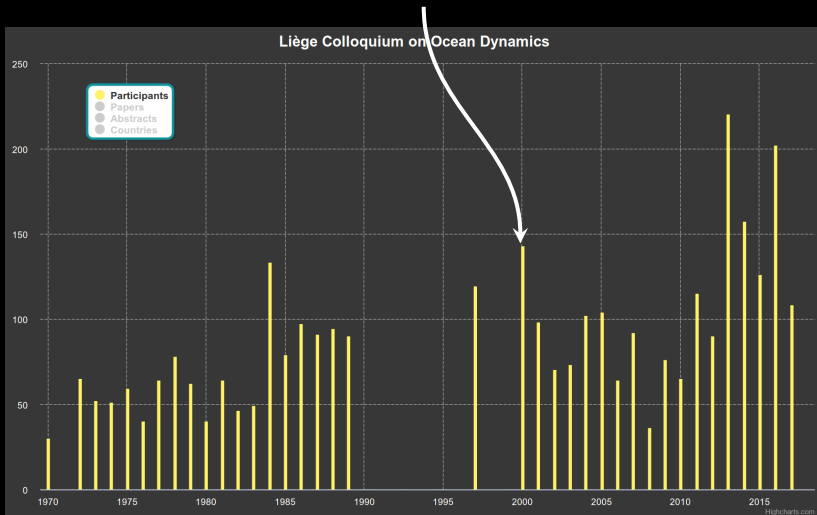
Most attended editions?

1984 "Coupled ocean-atmosphere models" 133



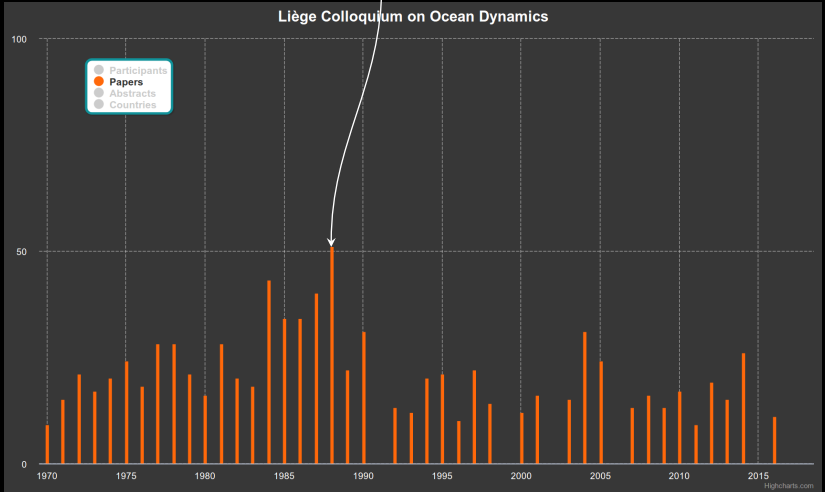
Most attended editions?

2000 "Exchange Processes at the Ocean Margins"143



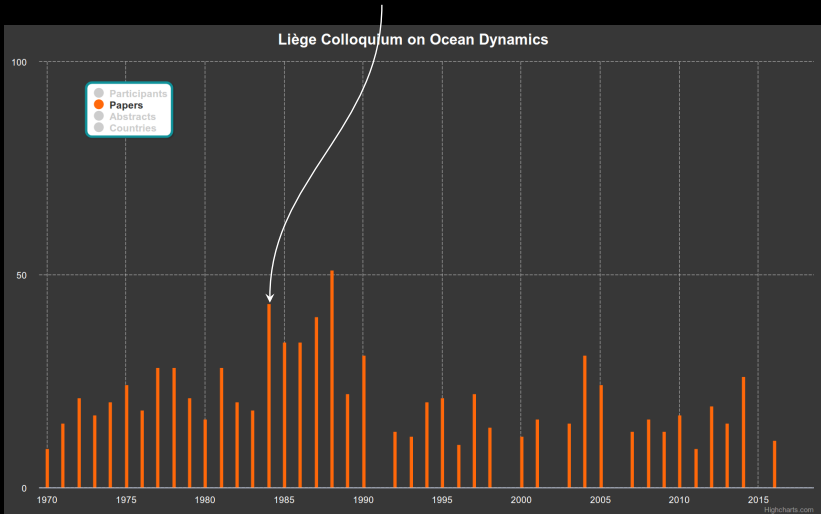
Papers in the special edition?

1988 "*Mesoscale/synoptic coherent structures in geophysical turbulence*" 51



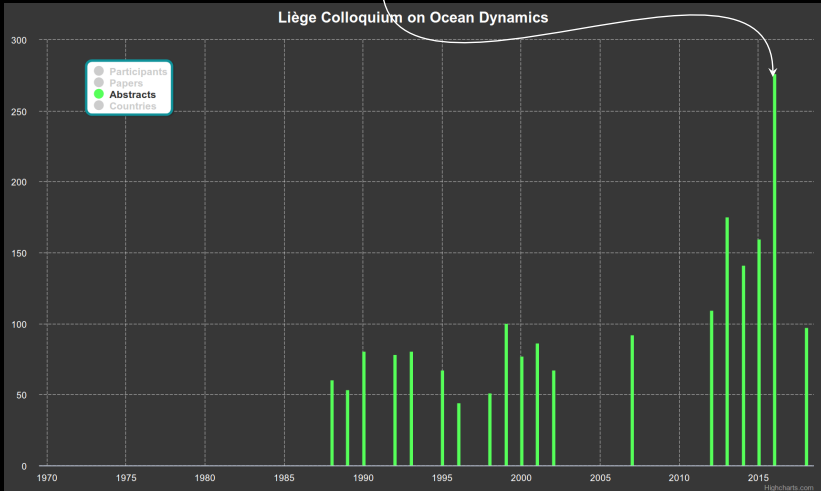
Papers in the special edition?

1984 "Coupled ocean-atmosphere models" 43



Most abstracts submitted?

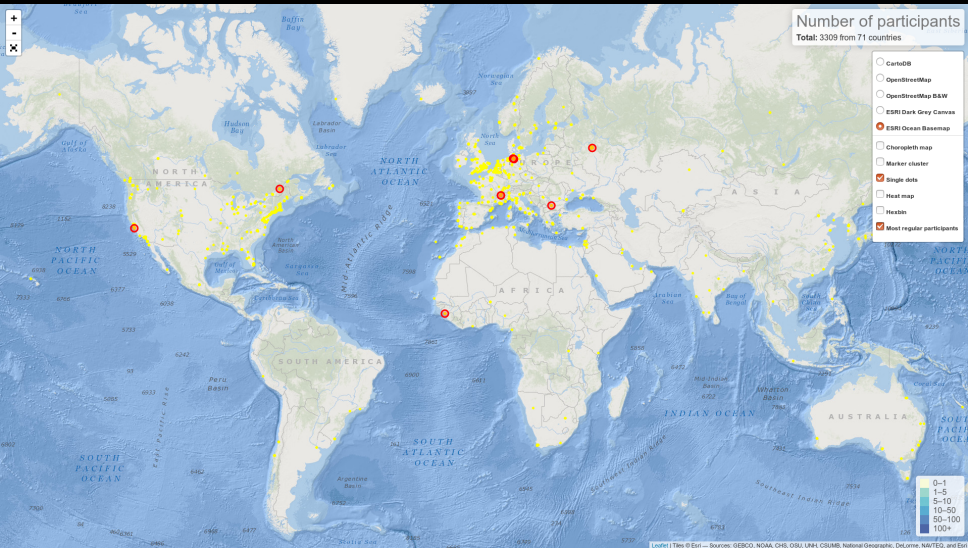
2016 "Submesoscale Processes"



Word frequency:

- ① ocean × 11
- ② marine, modelling, hydrodynamics × 10
- ⑤ turbulence, sea × 8
- ⑦ processes × 7

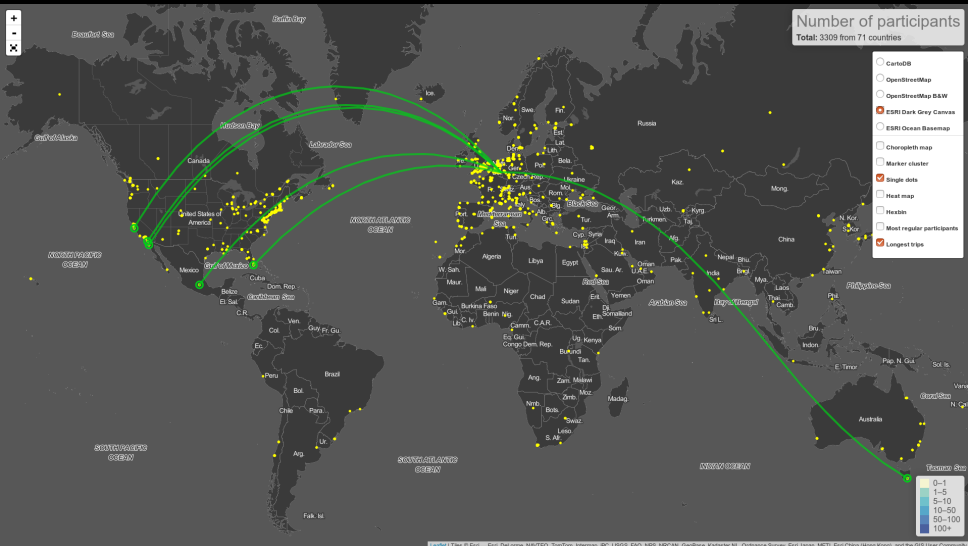
Most regular participants



Most regular participants

G. Chabert d'Hières	Grenoble (France)	12 ×
H.G. Ramming	Hamburg (Germany)	7 ×
A. Bah	Liège (Belgium), Conakry (Guinea), Laval (Canada)	7 ×
E. Stanev	Sofia (Bulgaria), Oldenburg (Germany), Hamburg (Germany)	7 ×
A. Kostianoy	Moscow (Russia)	7 ×
P. Brasseur	Liège (Belgium), Grenoble (France)	7 ×
P.C. Chu	Monterey, CA (U.S.A.)	7 ×

✈ Largest distances travelled



Largest distances travelled

Single travel: K. Swalding (University of Tasmania) 17016 km

Cumulated distance:

P. Chu	81395 km
A. Monreal	46523 km
E. Chassignet	45162 km
D. Salas de León	37178 km
C. Gibson	36704 km

✈ Largest distances travelled



Thank you

