



Some MWR IC product applications

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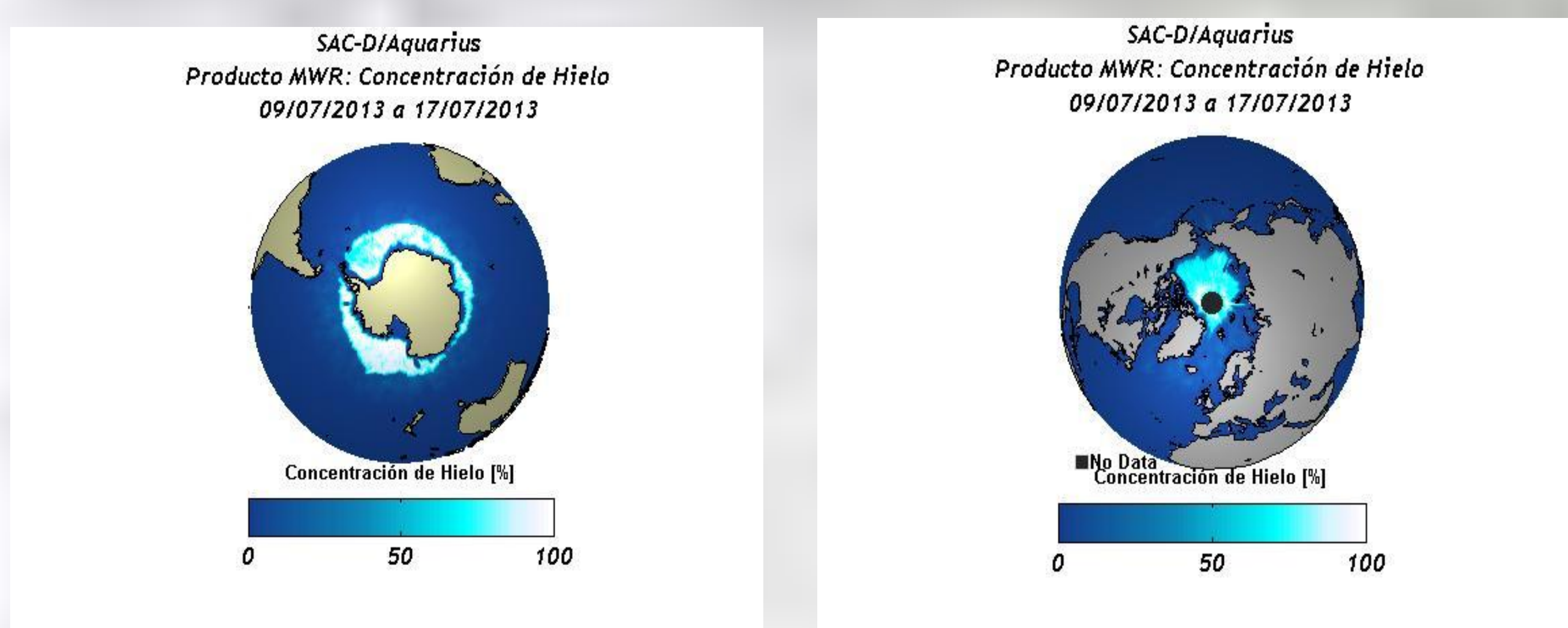
Summary

Detection of the ice that covers the marine surface in polar areas is of great interest for studies and monitoring of the climate and environment in high latitudes. Surface cover emissivity at the frequencies of 36.9 GHz and 23.5 GHz, captured by the SAC-D Micro Wave Radiometer (MWR), allows the estimation of the sea ice concentration (IC), applying algorithms adapted for this system. Using the IC product, generated by the CONAE, diverse applications are experienced in the Meteorology Department of the Servicio de Hidrografía Naval (SHN), in order to define the covered area by marine ice, edges, mapping its concentration rate and to make IC consultations about specific date and geographical area.

1. SEA ICE IN BOTH HEMISPHERES

Weekly visual expression of Ice Concentration (IC) on both hemispheres.

Utility: time dynamics of Sea Ice; animations

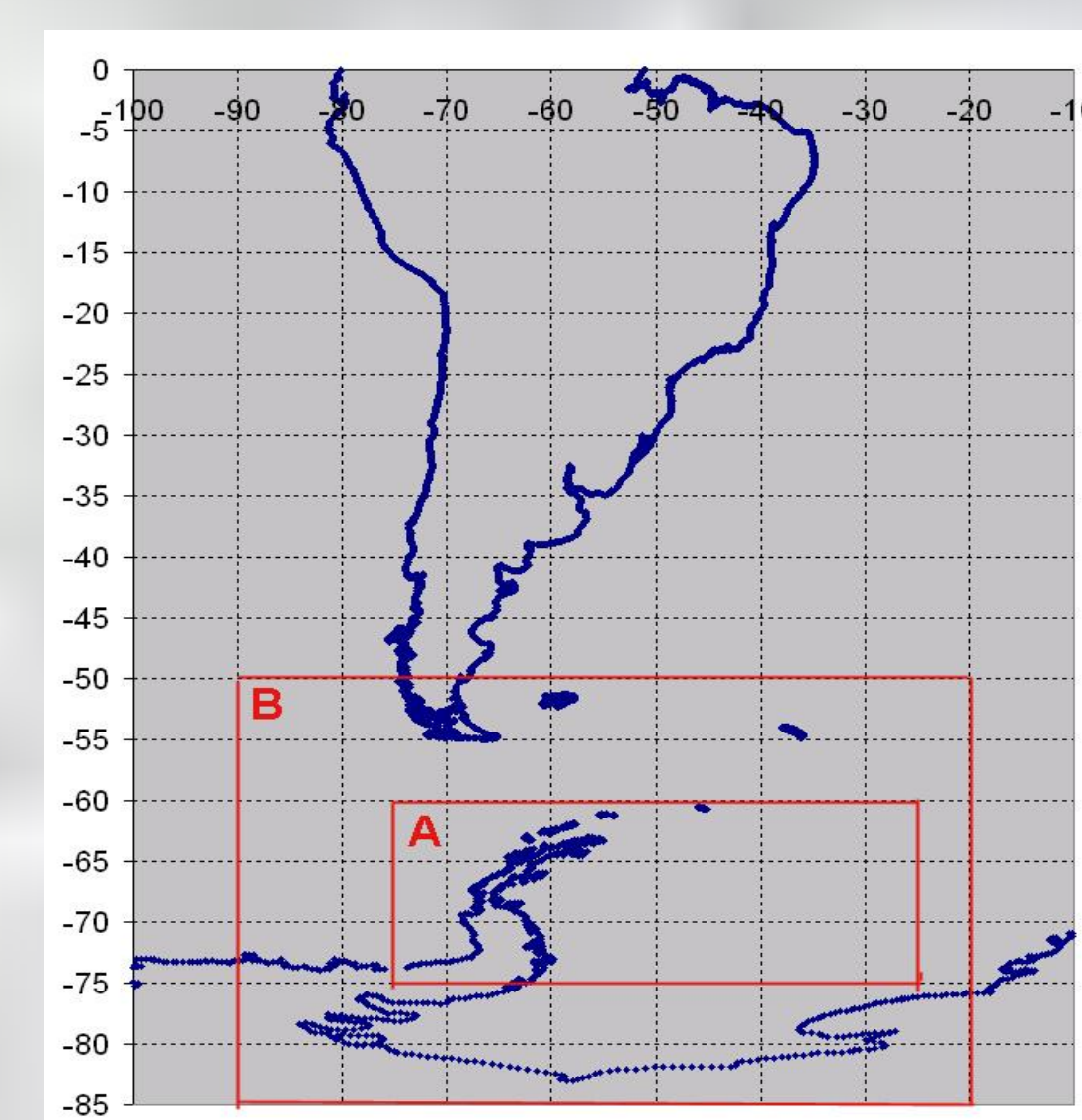


Result	Type	Date - Frequency	Source
Sea ice concentration (%) Weekly mean	Graphic Blue-white color scale	weekly	Level 2 data

2. ANTARCTIC SEA ICE

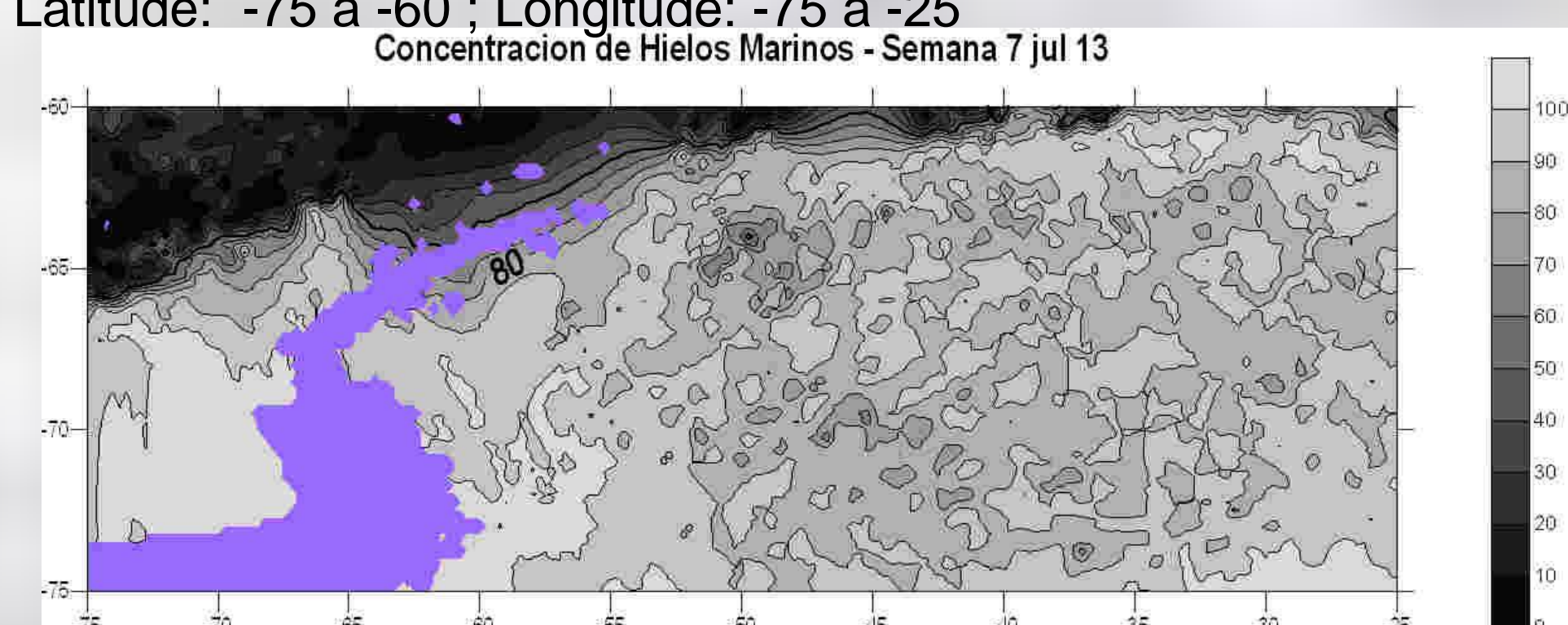
IC isolines mapping in 2 areas (A and B)

Utility: evolution of ice pack and limit (edge) in Weddell and Bellingshausen Seas



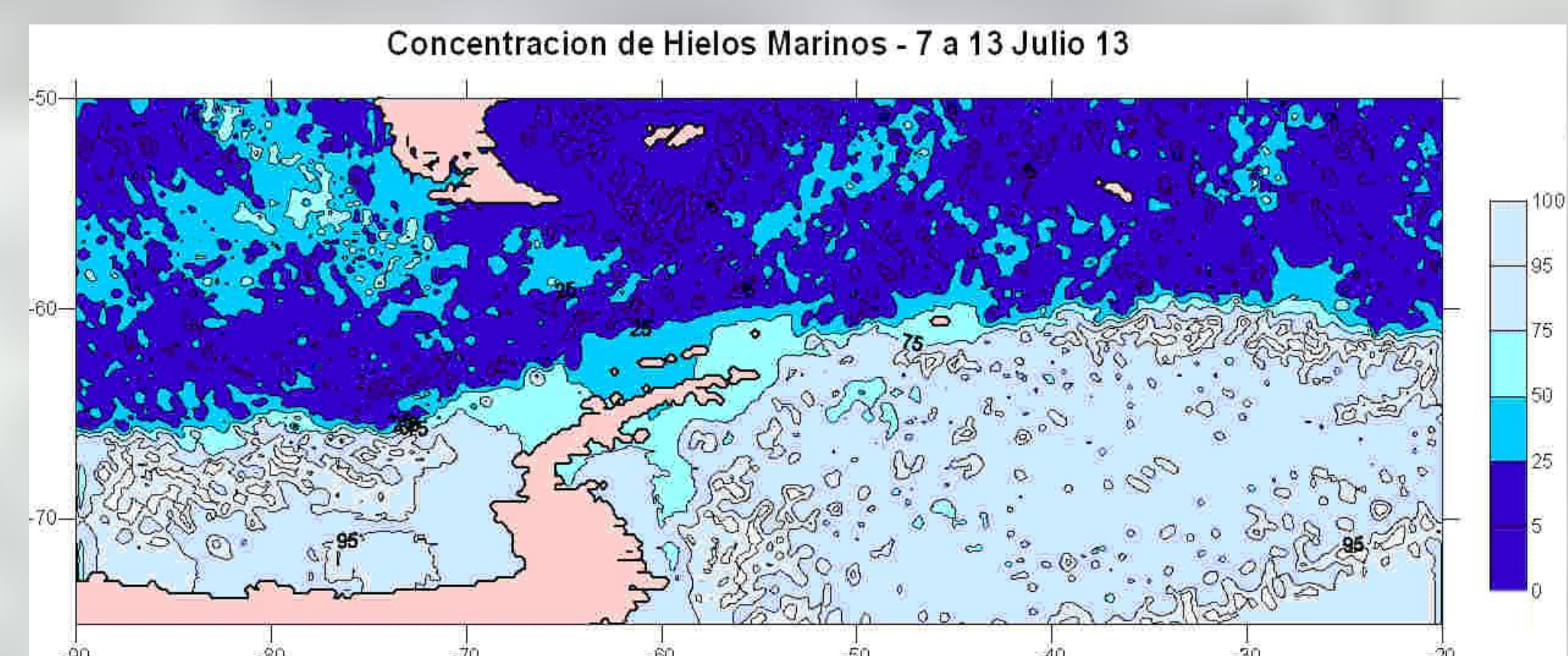
Zone A

Limits: Latitude: -75 a -60 ; Longitude: -75 a -25



Zone B

Limits: Latitude: -85 a -50 ; Longitude: -90 a -20

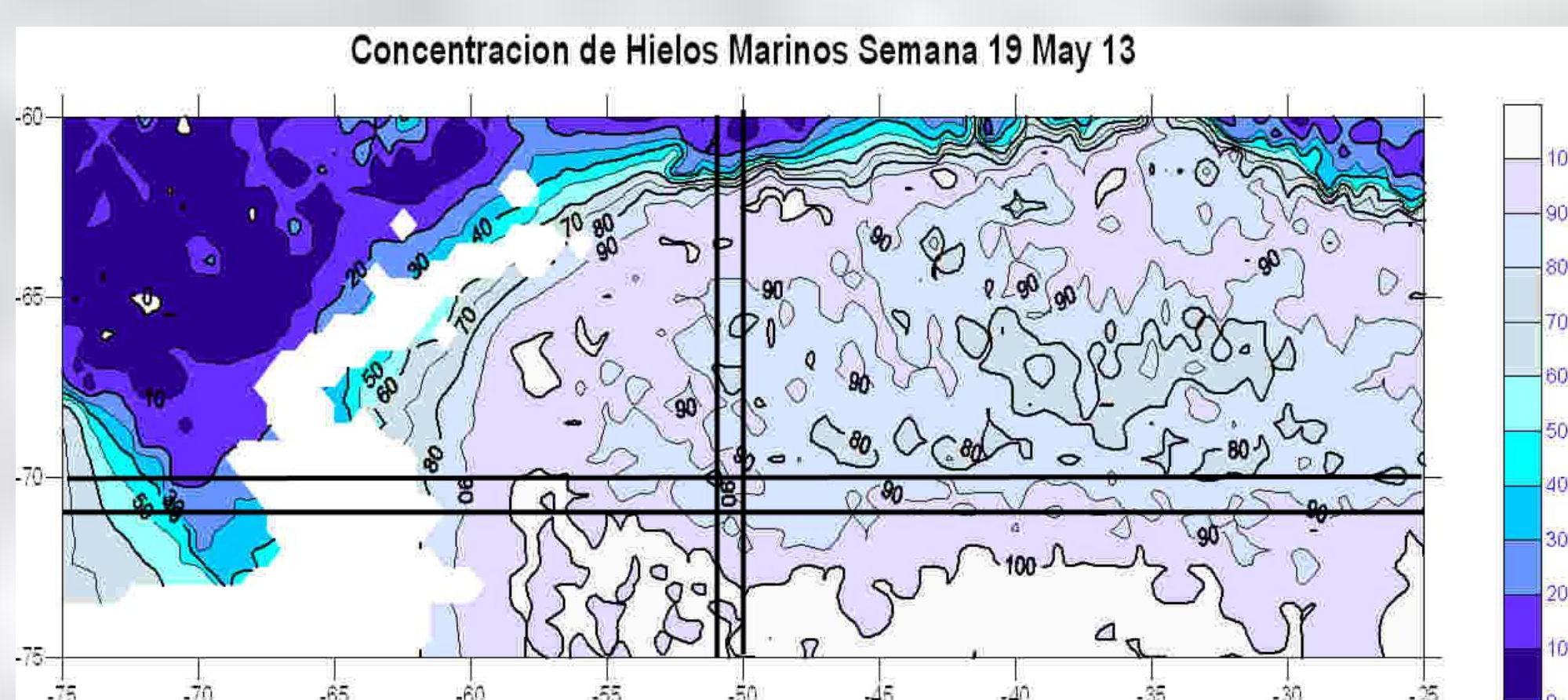


Result	Type	Date - Frequency - Zone	Source
Sea ice concentration (%) Weekly mean	Graphic IC isolines Sea Ice Edge Color scale (Blue-White or another)	Weekly Zone A: Peninsula Zone B: South and Antarctica	Level 3 data

3. CONSULTATION ABOUT SEA ICE CONCENTRATION

IC data tables (media, mode and standard deviation) selected by Date and Geographic zone (Latitude, Longitude)

Utility: spatial and time IC variability estimations



Numero	Media	Moda	Desv.Std.	Latitud	Longitud
7	90	90	4	-70.246	-50.728
3	90	90	3	-70.725	-50.207
5	90	90	4	-70.906	-50.808
2	70	70	0	-70.006	-50.979
5	90	90	5	-70.485	-50.471
3	90	80	9	-70.064	-50.148

Result	Type	Date - Frequency	Source
Sea ice concentration (%) Zone (Lat;Long) Weekly mean	Table with values of: number, mean and mode. Standard deviation, Latitude, Longitude.	Zone geographic limits defined by user (swath, day, week)	L2 or L3 data

Conclusions

It is foreseen that such applications contribute to the climate change monitoring and the studies of sea ice spatial and time variability.