



¿ QUÉ ES TIEMPO VIOLENTO O “SEVERO” ?

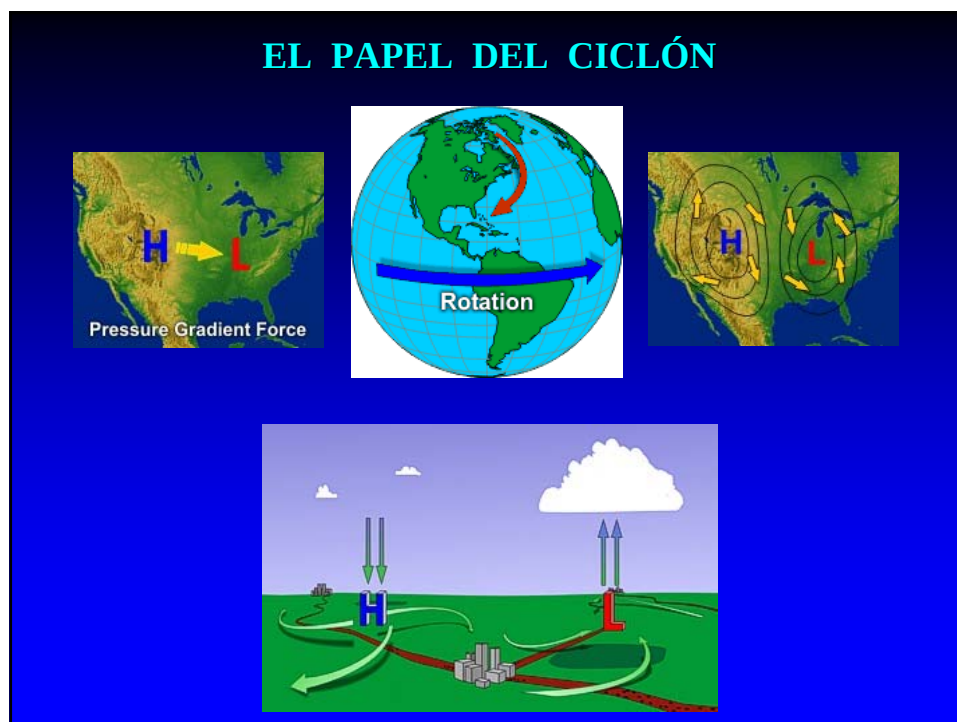
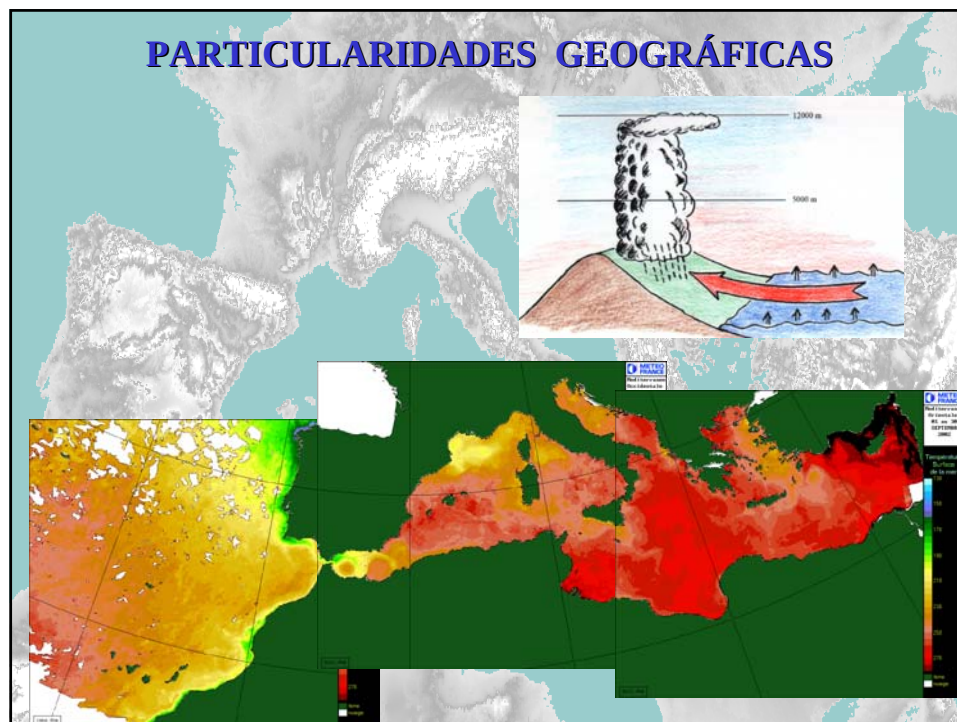
A) Definición clásica (USA)

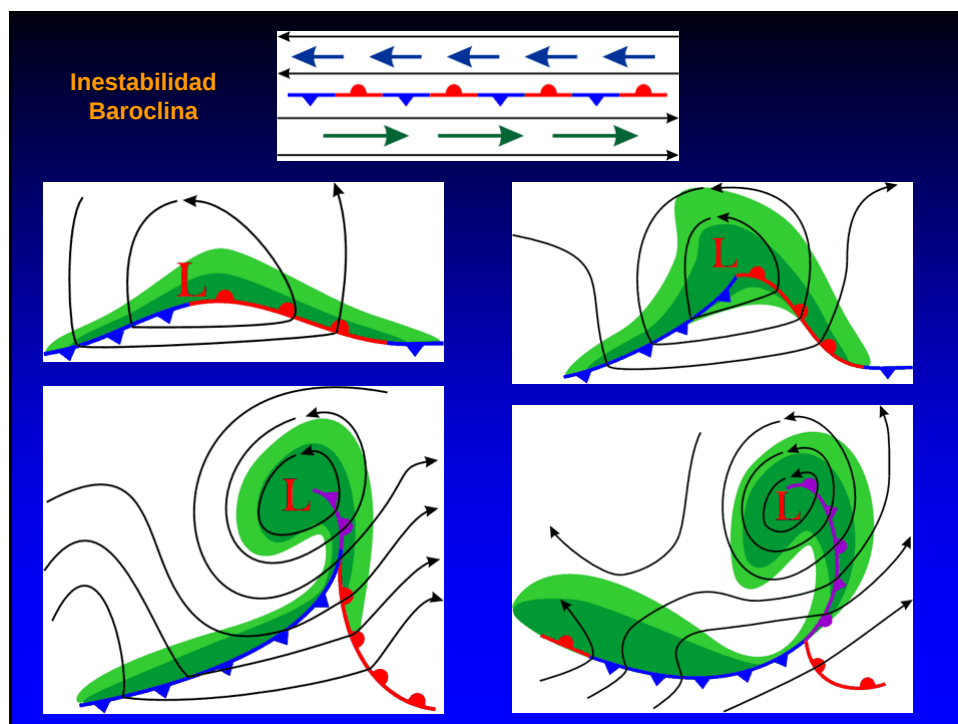
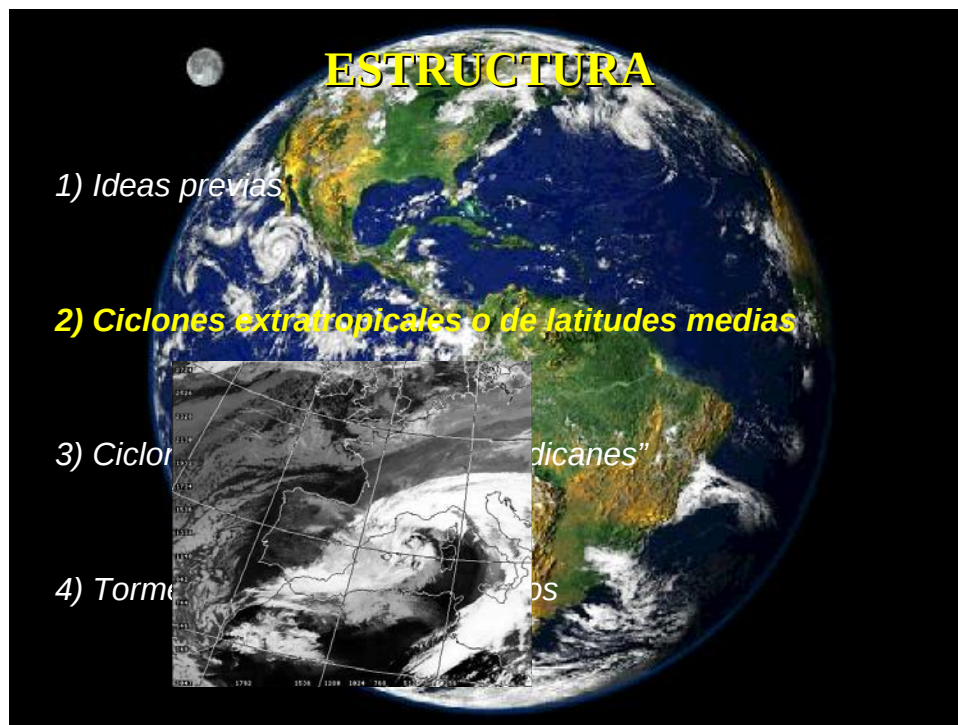
- Granizo con diámetro > 2 cm
- Vientos superiores a 95 km/h
- Tornados
- Producido por tormentas

B) Definición ampliada

- Lluvia intensa ($>$ inundaciones relámpago)
- No necesariamente producido por tormentas







An example: The November 2001 superstorm

Mid-Upper levels (H 500 / T 500)



ILLES BALEARS

[Hemeroteca](#) | [Agenda cultural](#) | [Cartelera](#) | [Titulares](#) | [Tienda](#) | [Restaurantes](#) | [De copas](#) | [Loterías](#) | [Clasificados](#)

discos

BALEARES 24HORAS
Opinión
Illes Balears

il·les balears

Sábado, 1 de noviembre de 2003 Actualizado a las 00:46

SIN PRECEDENTES.
El mar inunda Es Molinar y arroja rocas de más de un kilo a las calles de Ciutadella

«Nunca había visto así la playa de Cala Galdana», reconoce el alcalde de Ferreries - Una «lluvia» de plásticos procedentes del vertedero cayó sobre los habitantes de Formentera

Valid: Fri,31OCT2003 00Z

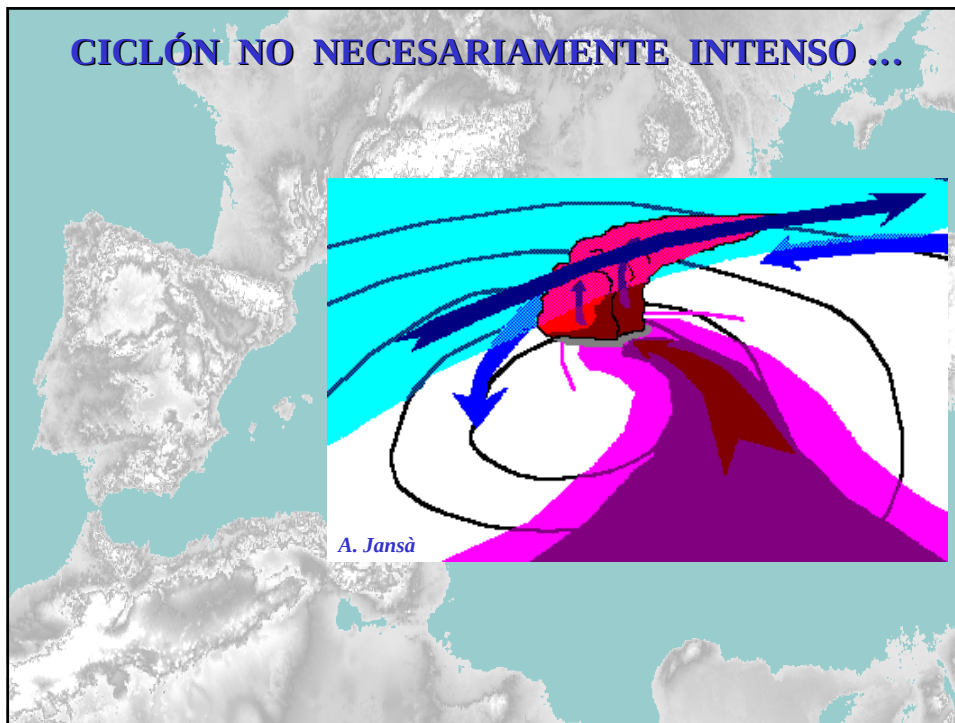
500 hPa Geopot.(gpm), T (C) und Bodendr. (hPa)

Olas de cinco metros y vientos de hasta 100 km/h obligan a cerrar todos los puertos de Baleares

Todos los puertos del archipiélago cerrados, tejas, comisas y árboles caídos por doquier, barcos a la deriva tras soltarse de sus amarres... Estas fueron las principales causas del vendaval con vientos de 100 kilómetros por hora que todo el día de ayer azotó las islas.

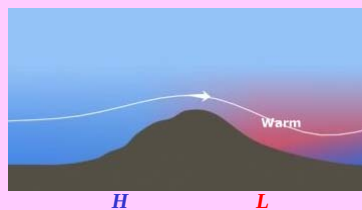
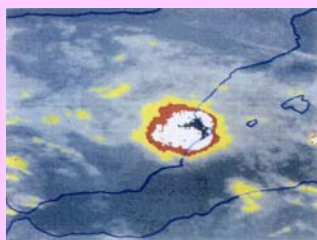
Temporales marítimos

CICLÓN NO NECESARIAMENTE INTENSO ...

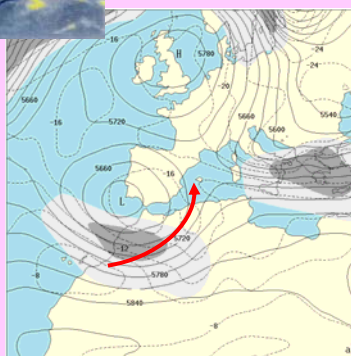


GANDÍA (3-4 Nov. 1987)

MCS (33 h)
Circular shape (~200 km diameter)
>800 mm / 36 h in **Gandía**



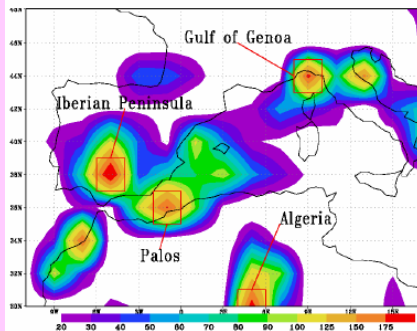
**Bajas orográficas
de sotavento**



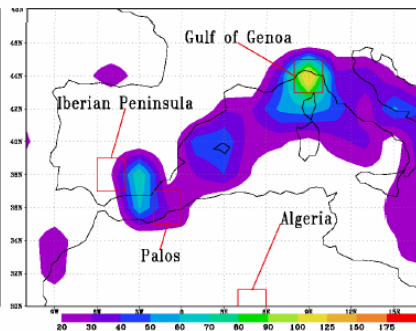
Source: INM – Balears

NUMBER OF CYCLONES (June 1995 – May 2002)

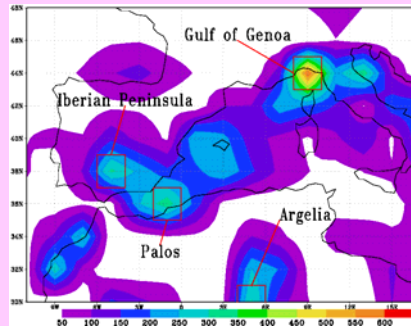
Summer



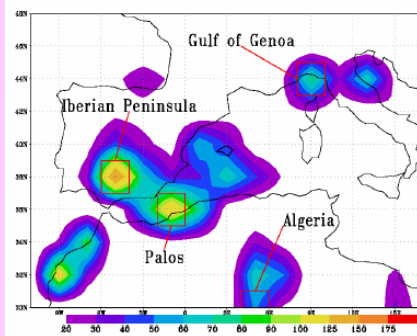
Winter



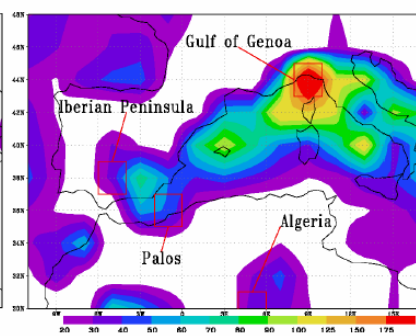
Total



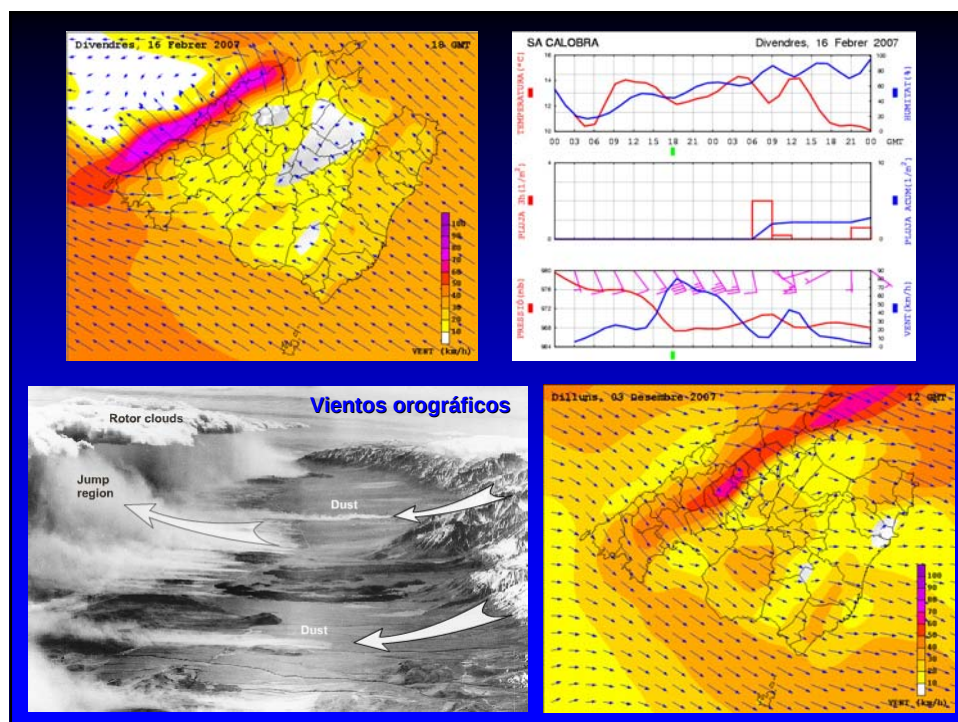
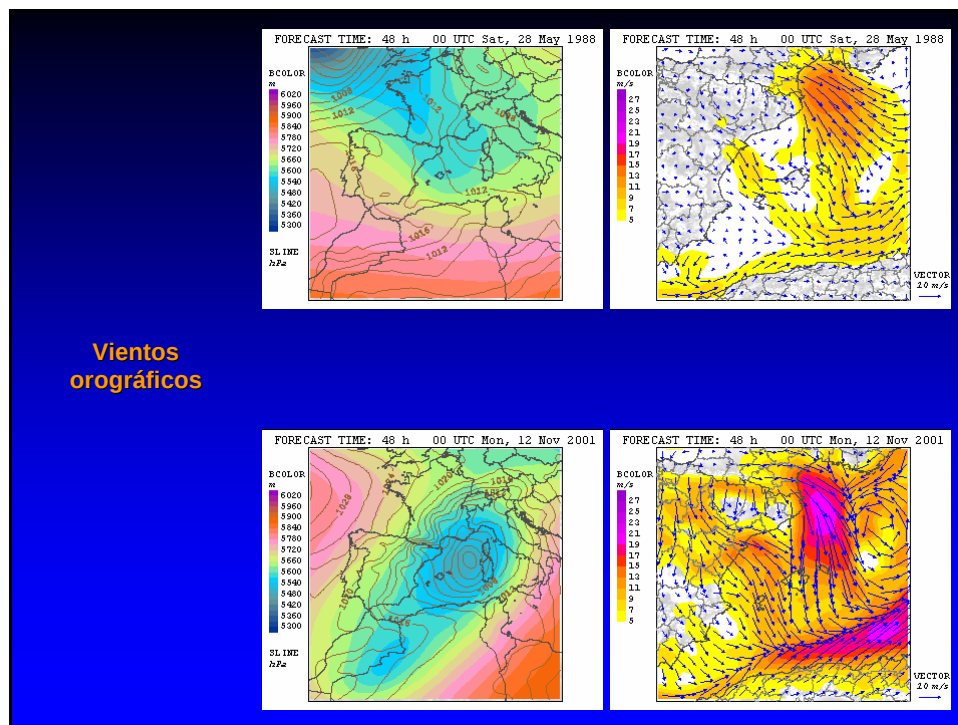
Shallow (1000-925 hPa)



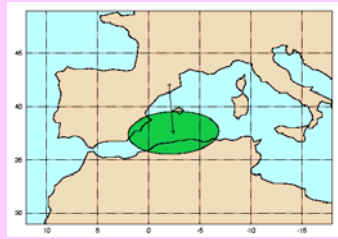
Deep (1000-300 hPa)



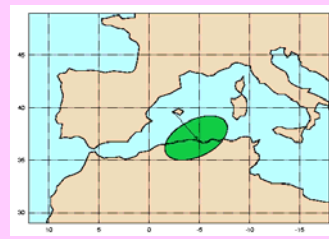
	Summer	Autumn	Winter	Spring	G Genoa	Palos	Iberian	Algeria
Shallow	70.5	43.6	31.8	46.3	41.9	79.6	80.7	79.0
Medium	9.5	12.1	11.7	12.1	14.6	6.0	8.4	9.5
Deep	20.0	44.3	56.5	41.6	43.5	14.4	10.9	11.5



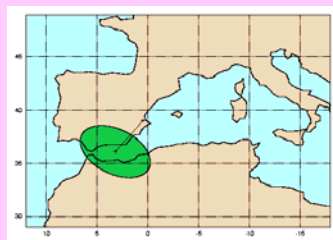
Simultaneity Cyclone-Heavy Rain



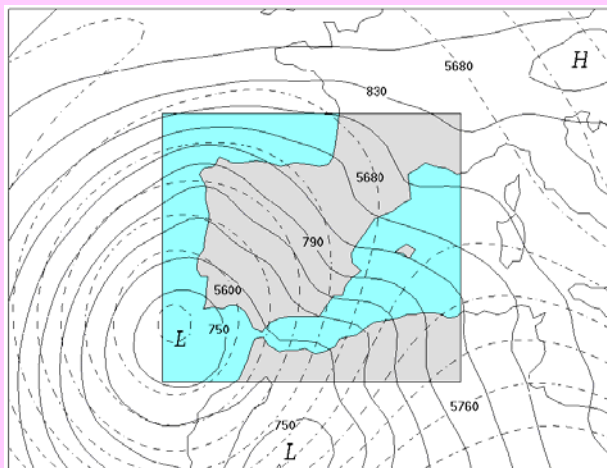
Catalonia



Balearic Islands

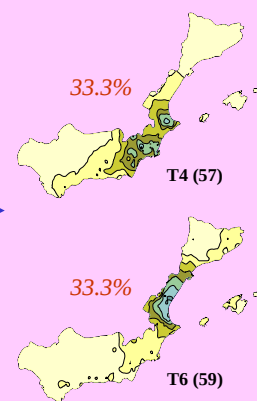


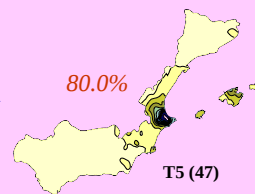
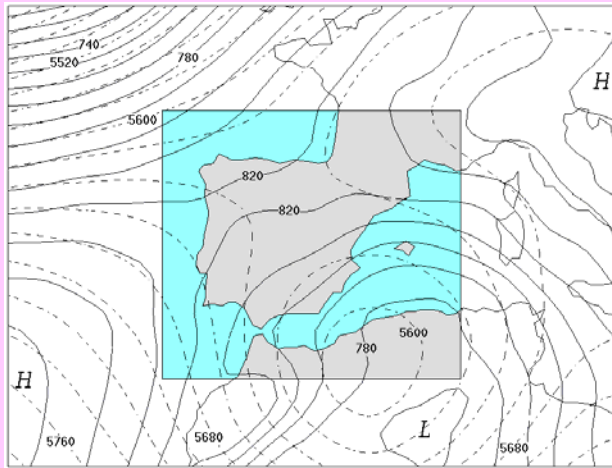
Valencia



AP6

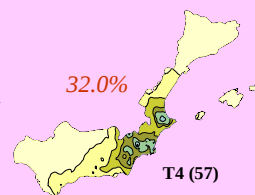
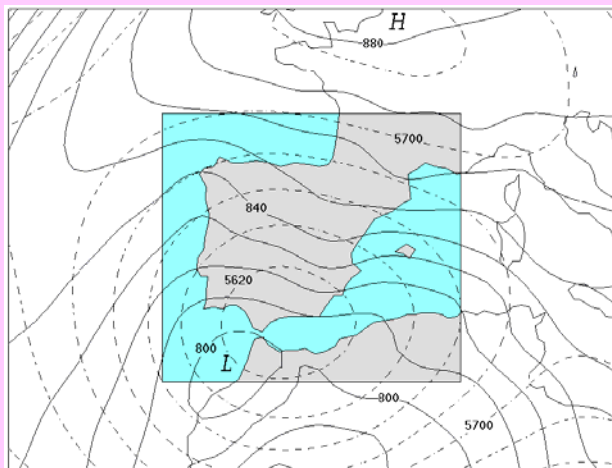
Spr 33.3%
Heavy 23.1%





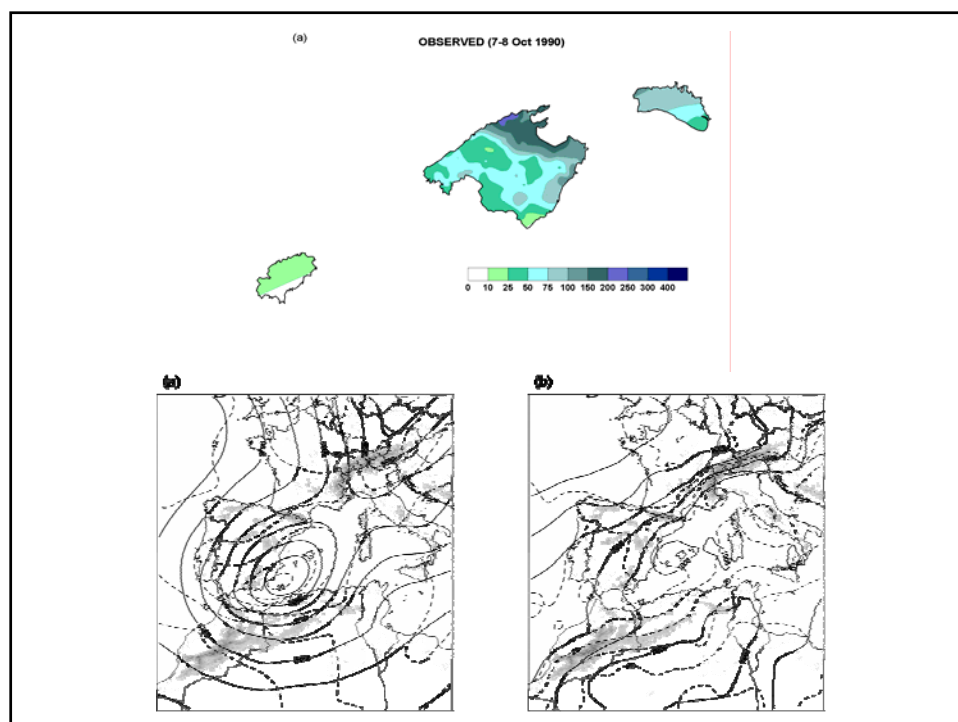
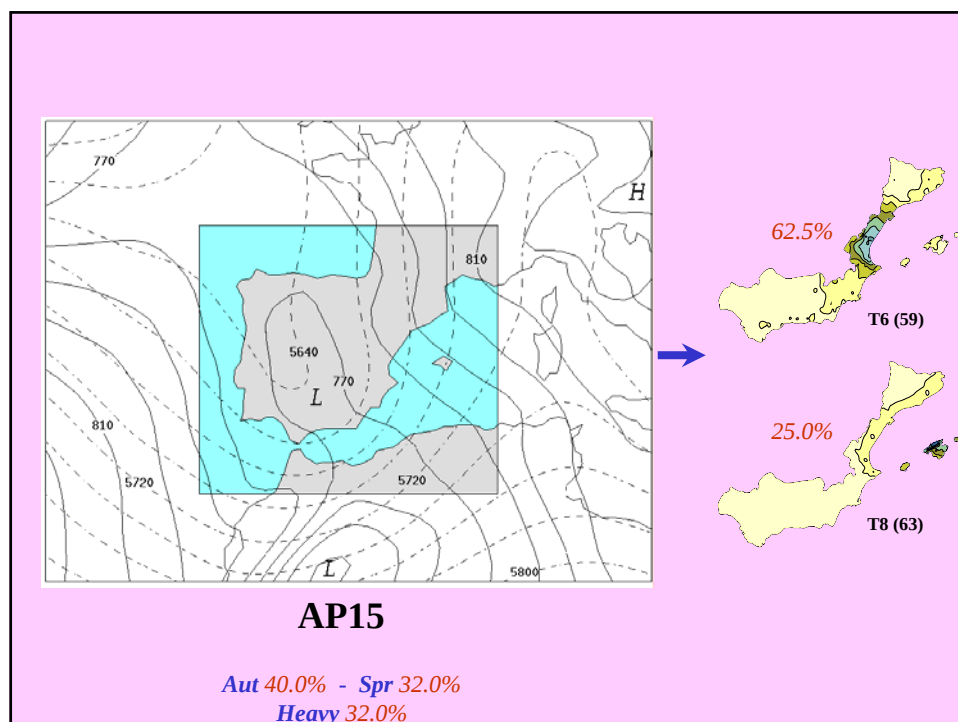
AP12

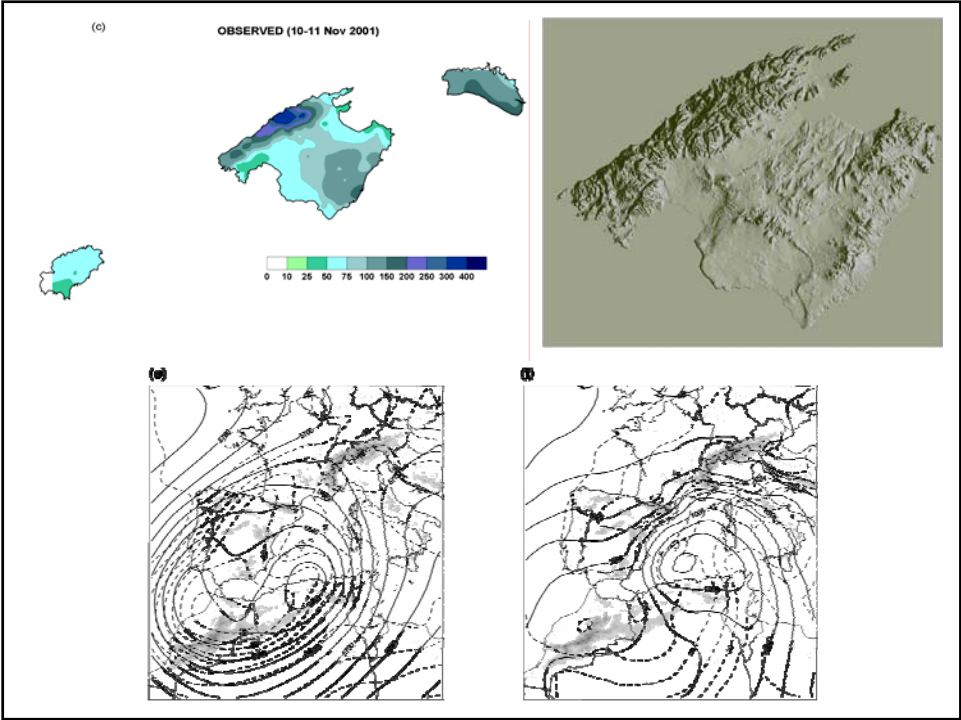
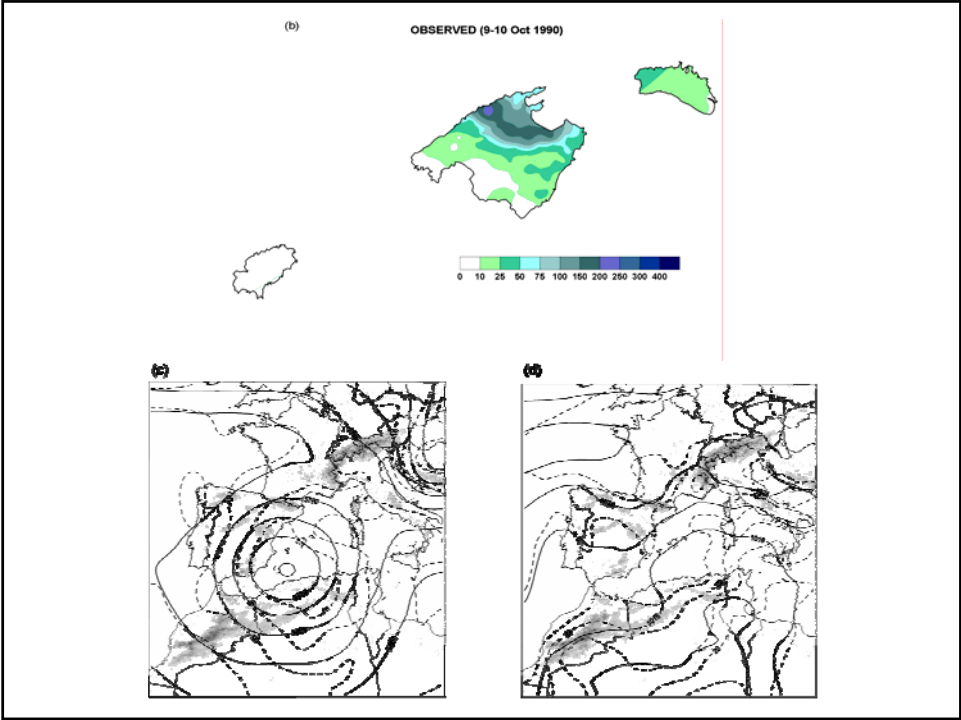
Win 47.8% - Aut 34.8%
Heavy 21.7%

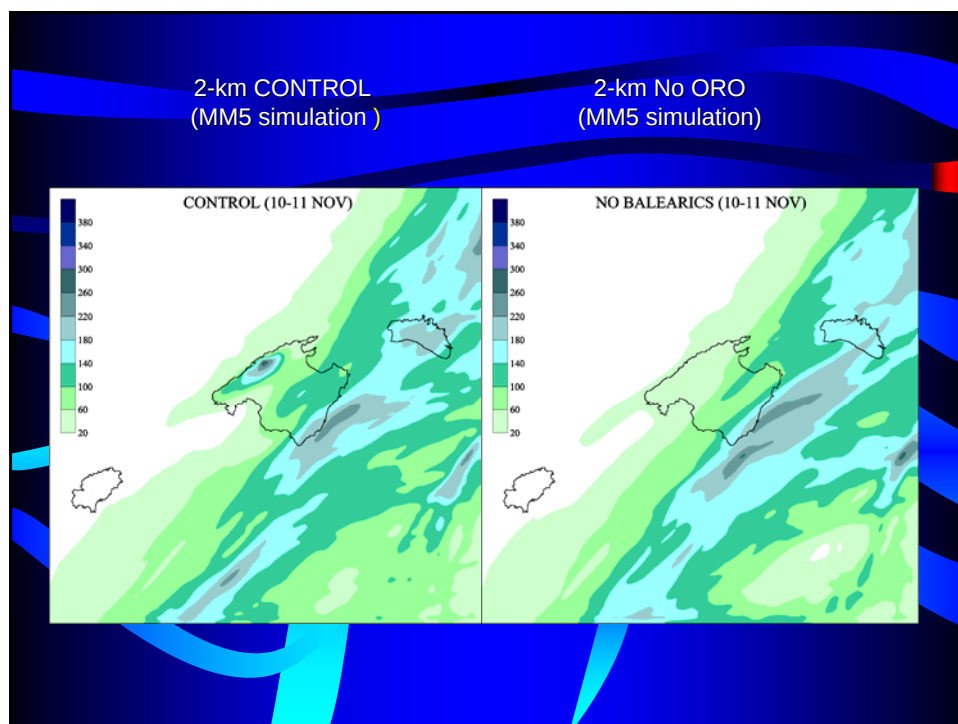
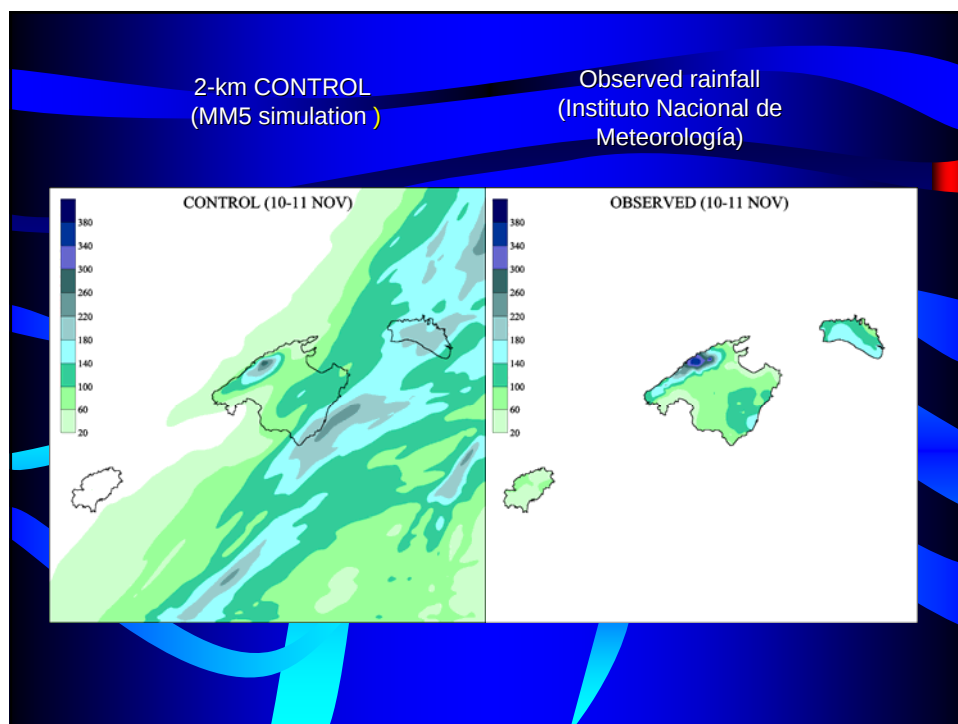


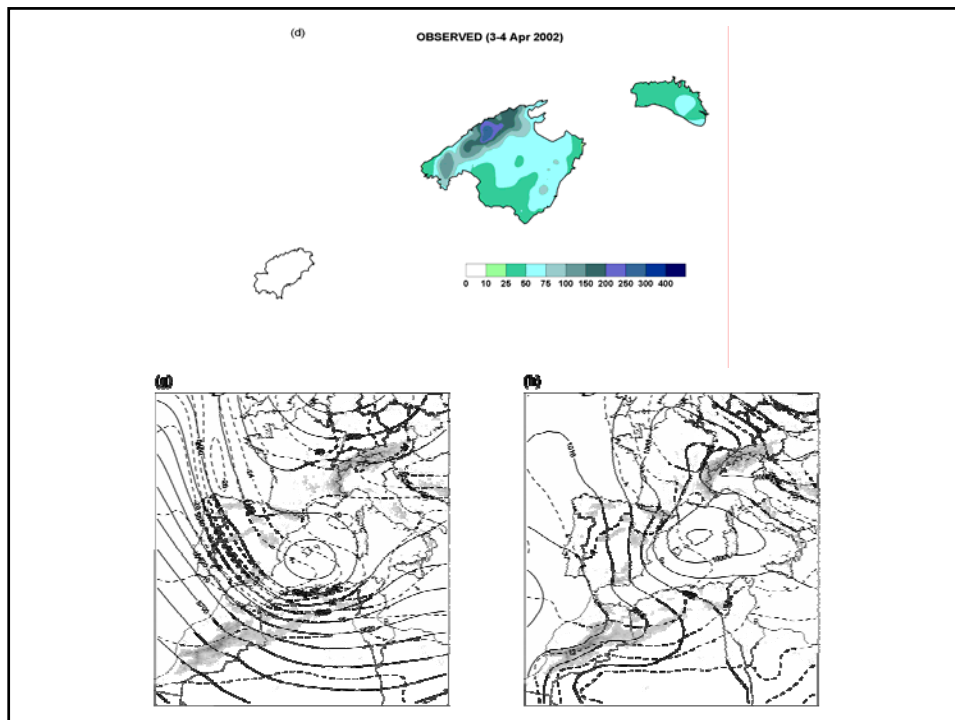
AP13

Win 53.0%
Heavy 37.9%







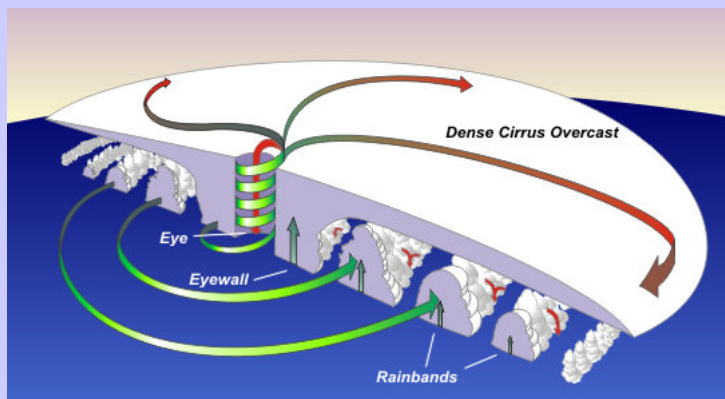
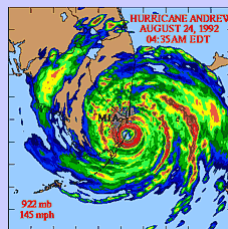
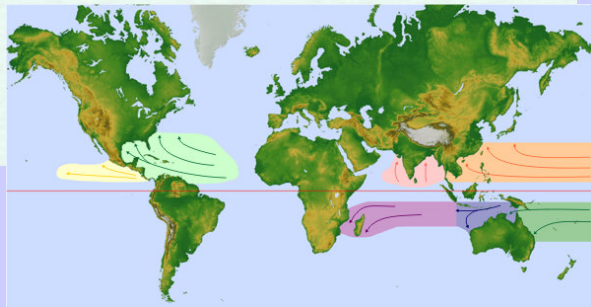
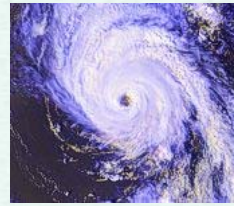


ESTRUCTURA

- 1) Ideas previas
- 2) Ciclones extratropicales
- 3) Ciclones cuasitropicales o "medicanes"
- 4) Tormentas y fenómenos severos

The background image is a satellite view of Earth showing a large storm system over the Iberian Peninsula. A smaller inset map shows the storm's path over the Iberian Peninsula and surrounding regions. The inset map is labeled 'Sat24.com' and shows the storm's path with a date and time stamp '11-15-08 15:01:53'.

Tropical Cyclones

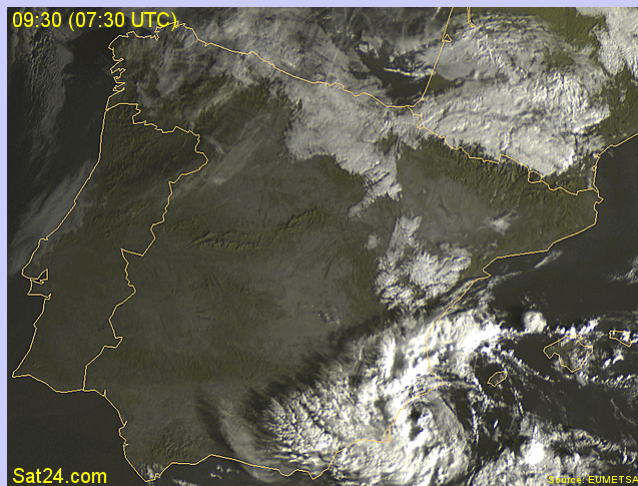


Escala Saffir-Simpson

Cat.	Speed	Damage
1	74-95 mph 64-82 kts 119-153 km/hr	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs.
2	96-110 mph 83-95 kts 154-177 km/hr	Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers.
3	111-130 mph 96-113 kts 178-209 km/hr	Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed.
4	131-155 mph 114-135 kts 210-249 km/hr	More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows.
5	Greater than 155 mph 135 kts 249 km/hr	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage.

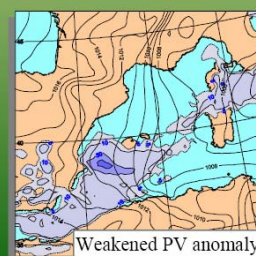
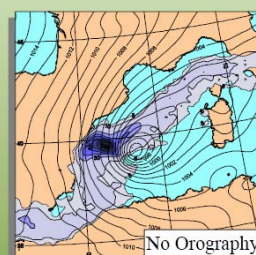
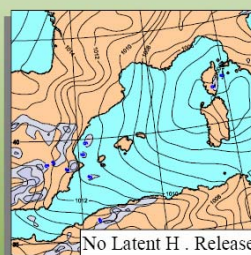
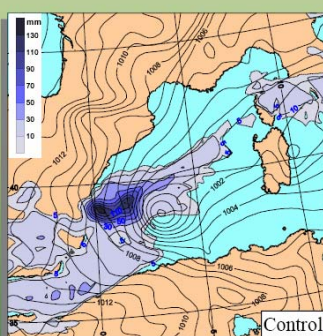
Medicane del 15-17 Enero 1995

Medicane del 18 Octubre 2007



Sensitivity

Results of the sensitivity experiments in terms of surface pressure and accumulated precipitation at 1200 UTC:

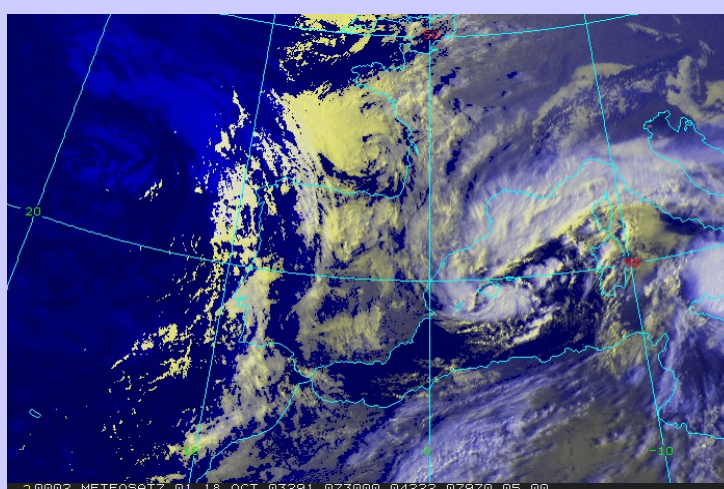


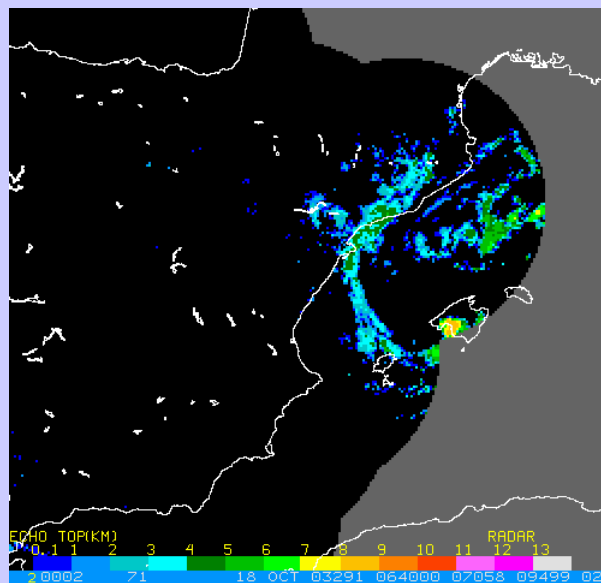
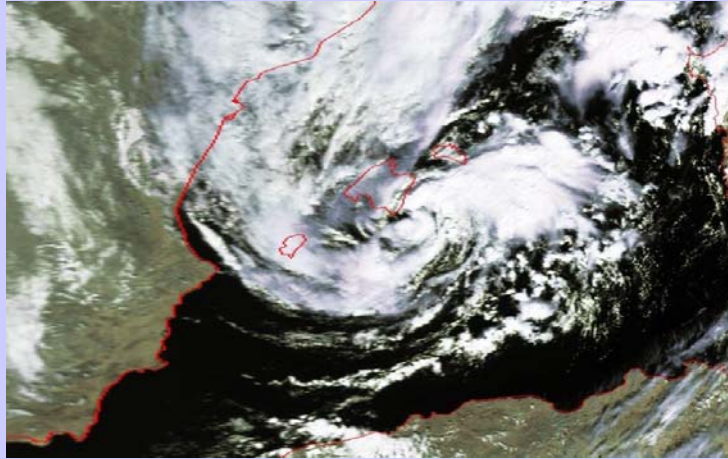
Simulaciones numéricas del
Medicane de 12 Septiembre 1996
(Homar et al. 2003)

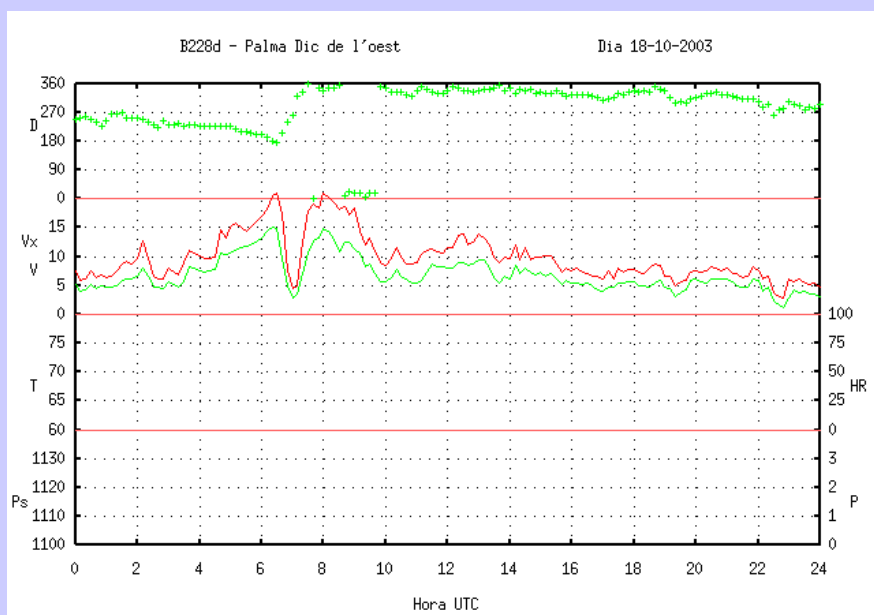


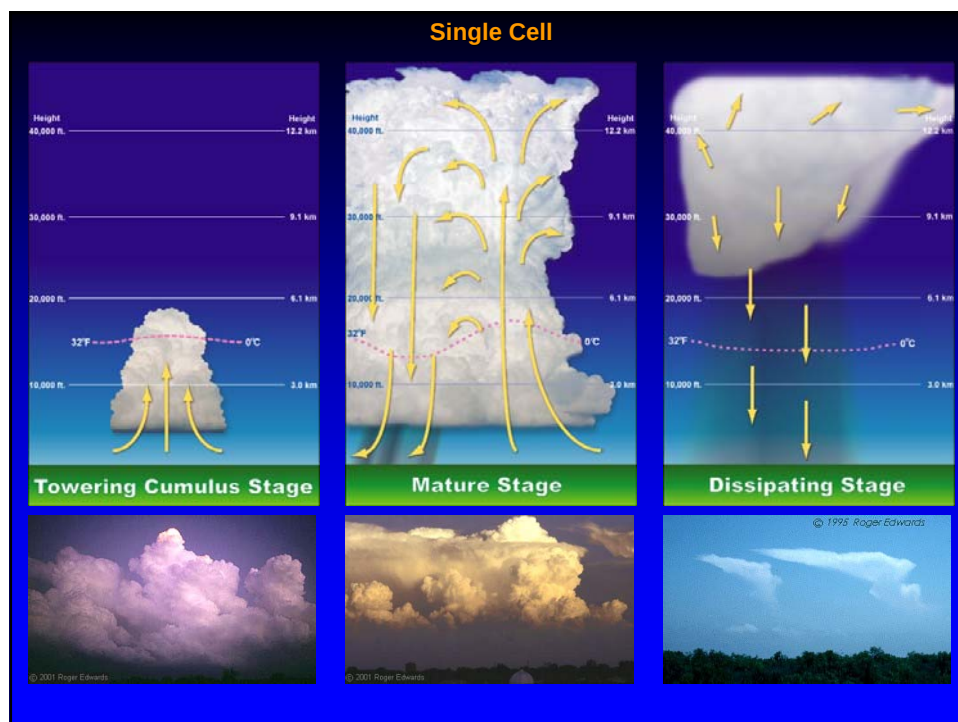
3/10/1986

Medicane del 18 Octubre 1996

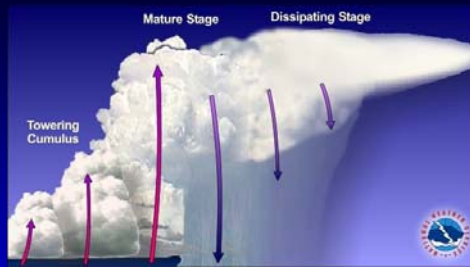




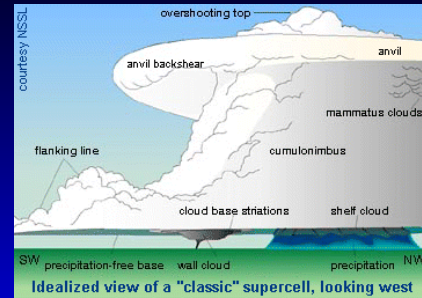




Multicell

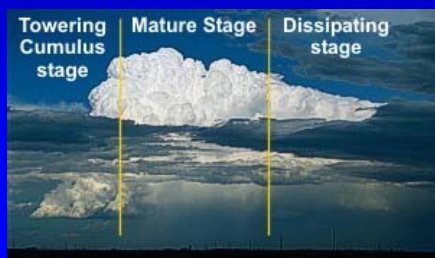


Supercell

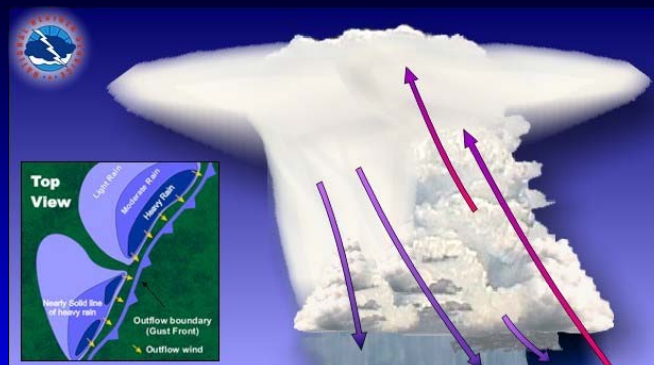


courtesy NSSL

Idealized view of a "classic" supercell, looking west



Squall Line



Damaging winds



(c) 2001 C. Doswell

Sucesos

La tormenta

La tormenta

En el polígono de Can Valero el desastre fue mayúsculo: volaron los tejados de algunas naves y decenas de coches quedaron destrozados. Foto: SEBASTIÁ AMENGUAL

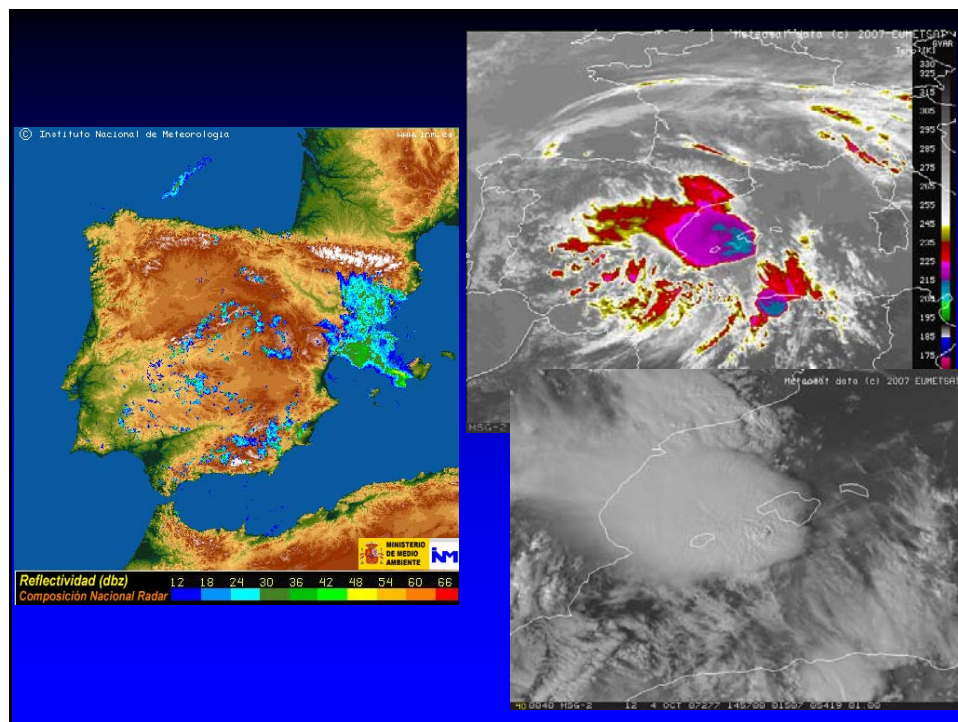
Catastrófico

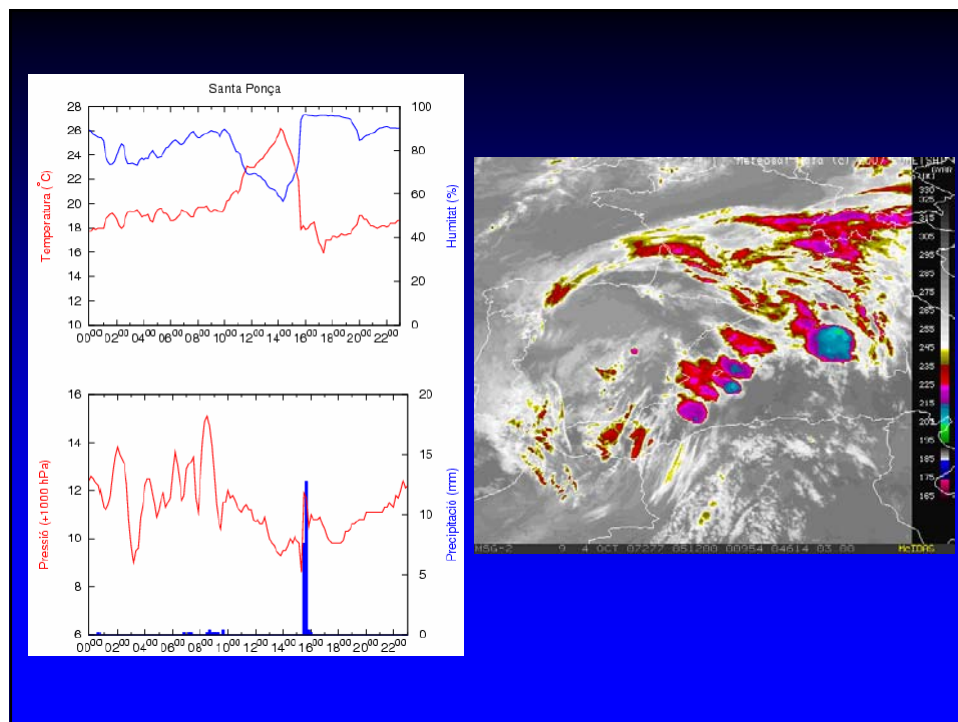
Una tormenta huracanada trae el caos a Palma en apenas quince minutos y deja un balance desolador

JAVIER JIMÉNEZ

Oscureció. Una gran nube negra entró por la bahía, cubrió Palma y desató el desastre. En Sólo quince minutos la capital balear padeció un calvario. Las consecuencias de la tormenta huracanada han sido catastróficas: una veintena de heridos, uno de ellos crítico; cientos de coches dañados; miles de árboles arrancados; torres de alta tensión derribadas; ventanas reventadas; naves industriales devastadas; caos histórico de tráfico; escapes de gas; inundaciones; torrentes a punto de desbordarse; colegios afectados; el estadio Son Moix con el techo destruido; parte del psiquiátrico evacuado; accidentes múltiples; incendios en casas; retrasos en el aeropuerto...

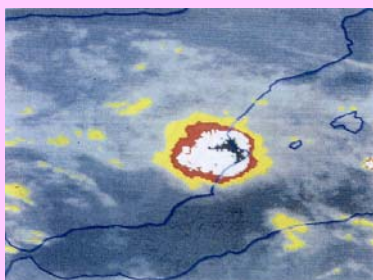
4/10/2007





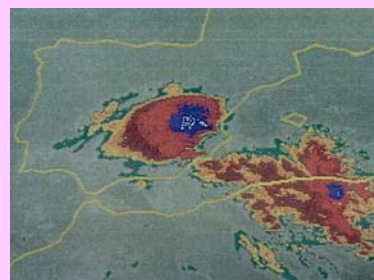
GANDIA (3-4 Nov. 1987)

MCS (33 h)
Circular shape (~200 km diameter)
>800 mm / 36 h in Gandia

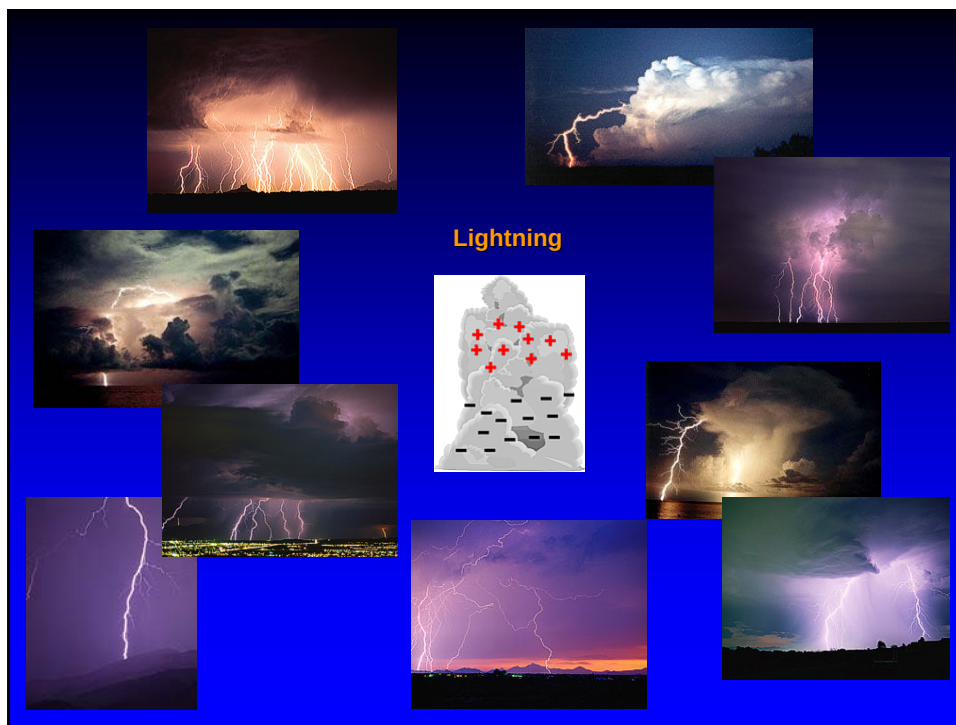


TOUS (20 Oct. 1982)

MCC (>12 h)
>400 mm
Dam breaking in Tous



Mesoscale convective systems



Hail

Consell

Un centenar de cotxes, teulades i finestres fets malbé a les Balears a causa d'una pedregada

21/09/2003

Actualitzat a les 18:51 h

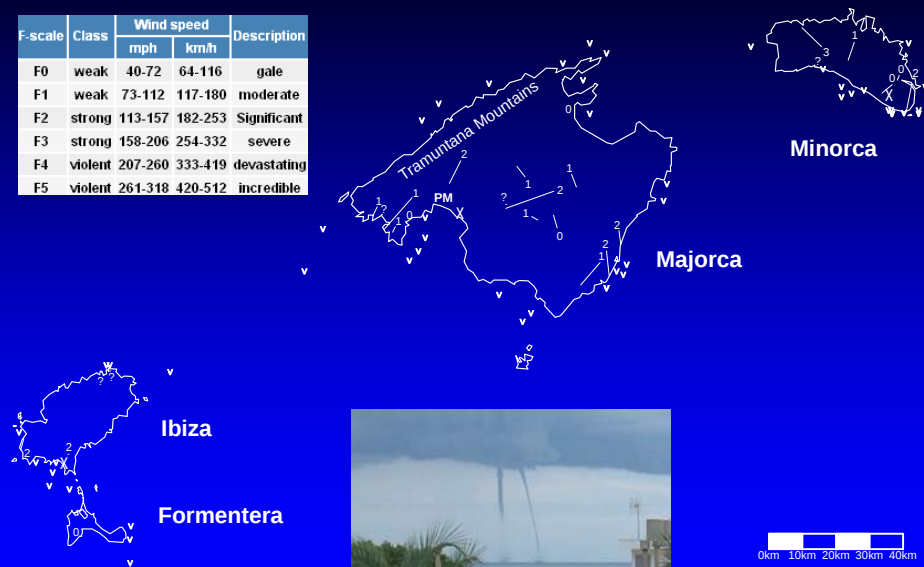
Una forta pedregada ha despertat aquesta nit molts veïns de Consell, a Mallorca. La tempesta ha estat curta, però intensa, i ha fet malbé un centenar de cotxes, teulades, arbres i vidres de portes i finestres. Aquest dimarts, encara se'n podien veure les conseqüències mentre els propietaris afectats ja reparaven els desperfectes.

An example: The severe hail storm in Alcañiz (16th August 2003)



1989-1999: 27 tornadoes and 54 waterspouts

F-scale	Class	Wind speed		Description
		mph	km/h	
F0	weak	40-72	64-116	gale
F1	weak	73-112	117-180	moderate
F2	strong	113-157	182-253	Significant
F3	strong	158-206	254-332	severe
F4	violent	207-260	333-419	devastating
F5	violent	261-318	420-512	incredible



12/10/2004

Supercell Mesocyclone

