



Floods and Severe Multicélula in Almansa (Albacete)

14/06/2004

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Link to the Tópico related in the Forum of Meteored:

<http://www.meteored.com/foro/index.php?board=13;action=display;threadid=12787>

Introduction:

The past June 14th 2004 the city of Almansa (Albacete) suffered a strong storm accompanied by an intense hailstorm that caused diverse floods in the population.

Almansa is located in the most Eastern part in the province of Albacete at about 73 km to the E of the capital, 113 km to the SW of Valencia and 93 km to the NW of Alicante. It is situated in a high plateau of about 700m of altitude surrounded by mountains forming a corridor with direction E-W, the named Corridor of Almansa, one of the 17 natural pass of the Peninsula and that communicates the South Plateau with the Valencian Community.



Its climate characterizes by the irregularity of its precipitations, being the storms and the East situations those that produce more rains, because the Atlantic fronts usually arrive to this zone so dry.

Its annual average pluviometry is hardly of 385 l/m², and the rainiest months are May and June because of the storms at the end of the spring, and October due to the East storms.

Winters are cold and dry with frosts, the summers are warm with annual maximum temperature of about 37-38° C.

Climatic data of Almansa extracted of the GIS of Agrarian Data (SIGA), in Internet (<http://www.mapya.es/siga/index.htm>), by the Ministry of Agriculture, Fishing and Feeding.

PLUVIOMETRÍA MEDIA MENSUAL

NOMBRE	CLAVE	ENE.	FEB.	MAR.	ABR.	MAY.	JUN.	JUL.	AGO.	SEP.	OCT.	NOV.	DIC.	ANUAL
ALMANSA	8200A	25	25	35	38	46	40	13	25	34	44	36	24	385

INDICADORES MEDIOS DE MUNICIPIOS

NOMBRE	CODIGO INE	ALT.	PEND. (%)	PREC. ANUAL (mm)	T° MIN. (°C)*	T° MED. (°C)	T° MAX. (°C)**	ETP ANUAL (mm)	PERIODO CALIDO***	FACTOR R
Almansa	2009	816	3	446	1.8	13.5	29.8	739	1	93

* Average of minimum temperatures in the coldest month

** Average maximum temperatures in the warmest month

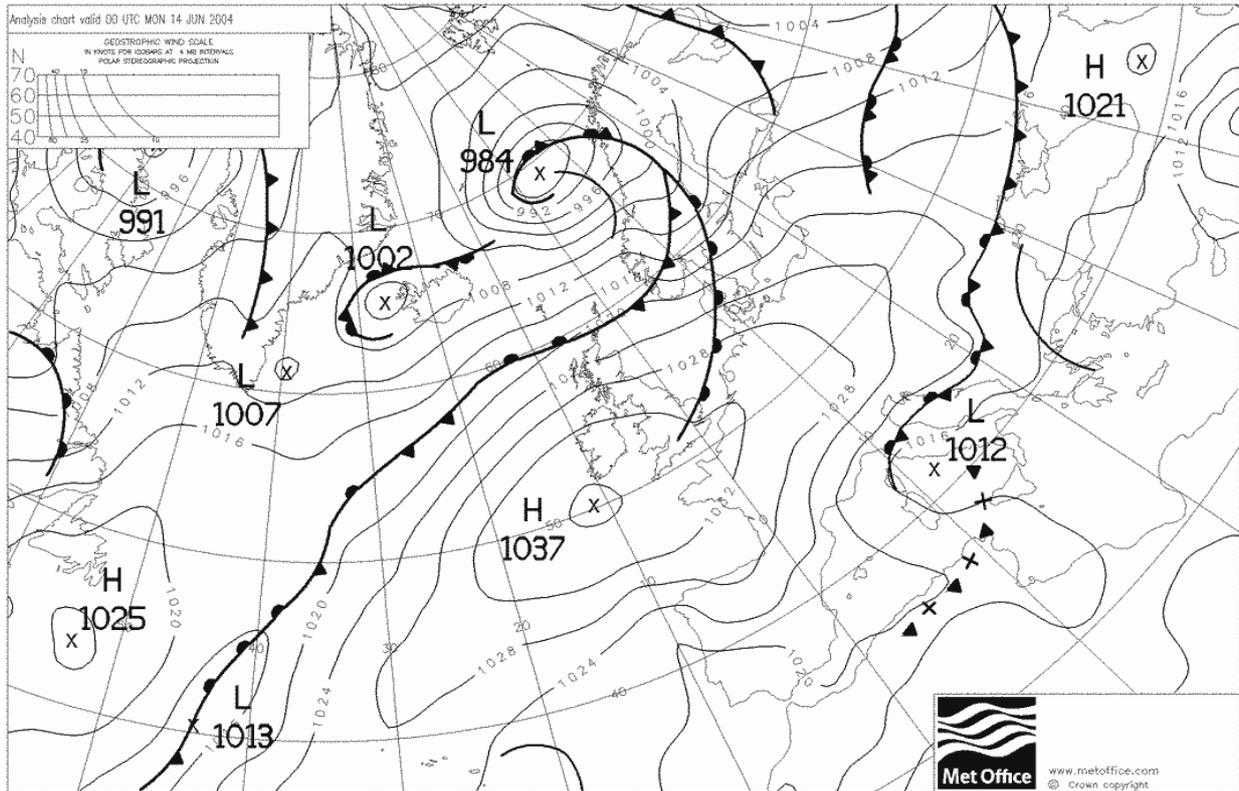
*** Number of months

The strong storms, as which occupies this article, are not unknown in this zone and every 3 or 4 years we usually have daily precipitations of more than 50 l/m² (June 14th, 2004, September 6th, 2001, September 30th 1997,...)

The relative proximity to the Mediterranean Sea with their humid and warm East winds re-feed these storms that form inside the East, unloading great amounts of precipitation in just a short time.

Synoptic situation:

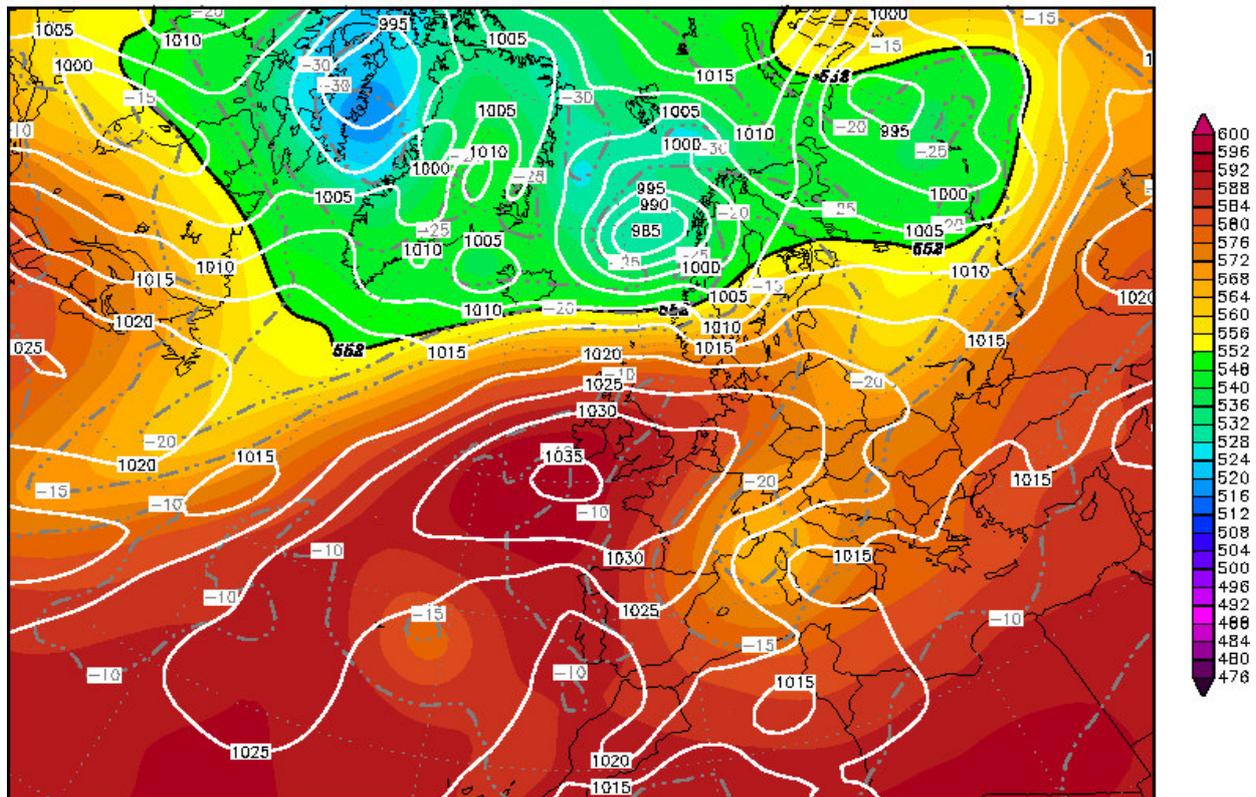
The synoptic situation the day of the storm appeared interesting. As we can see in this map of height of 500 Hpa at 00:00h (universal time) the day June 14th, an undulation of the general circulation of the polar jet-stream in the zone of Russia had finished by strangling and isolating, giving rise to a Cut-off Low, that in those hours was located on the Gulf of Genoa and that had a backwards movement (from NE to SW) with direction towards the peninsular Mediterranean façade.



Init : Mon,14JUN2004 00Z

Valid: Mon,14JUN2004 00Z

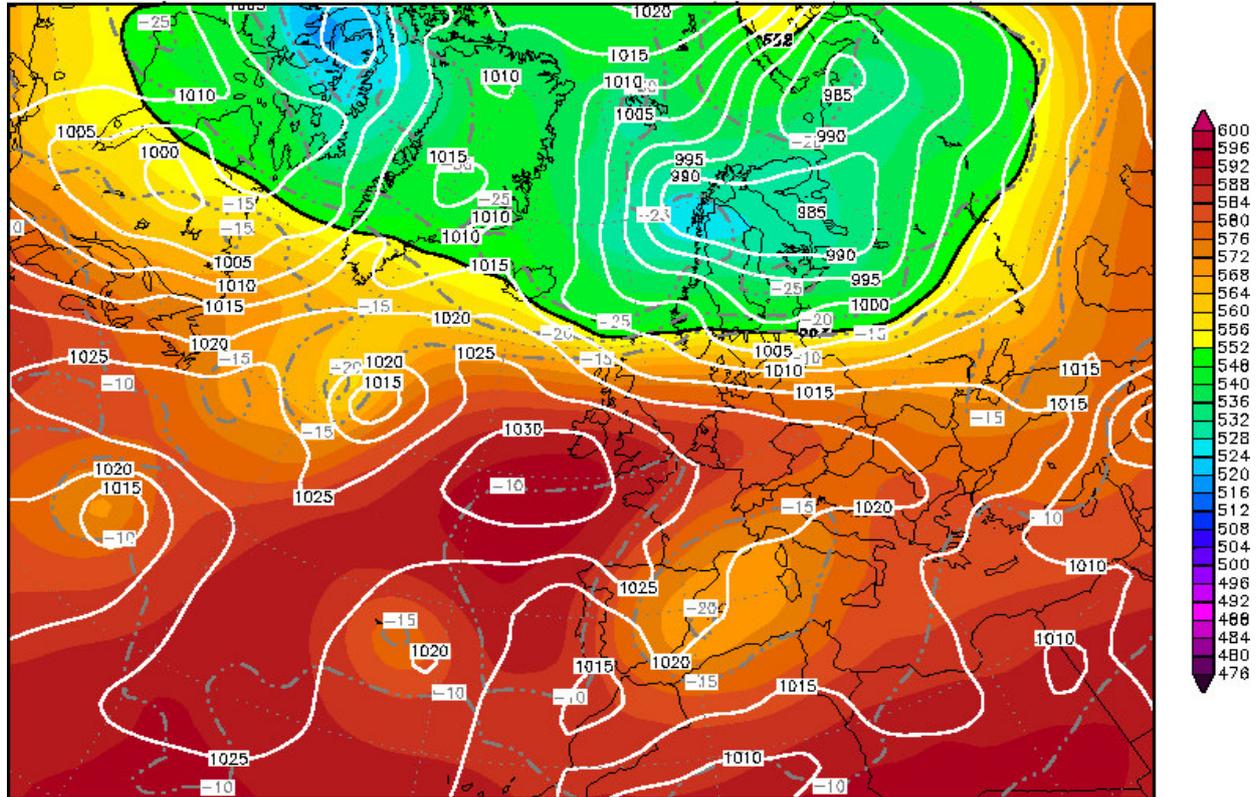
500 hPa Geopot.(gpm), T (C) und Bodendr. (hPa)



Daten: GFS-Modell des amerikanischen Wetterdienstes
(C) Wetterzentrale
www.wetterzentrale.de

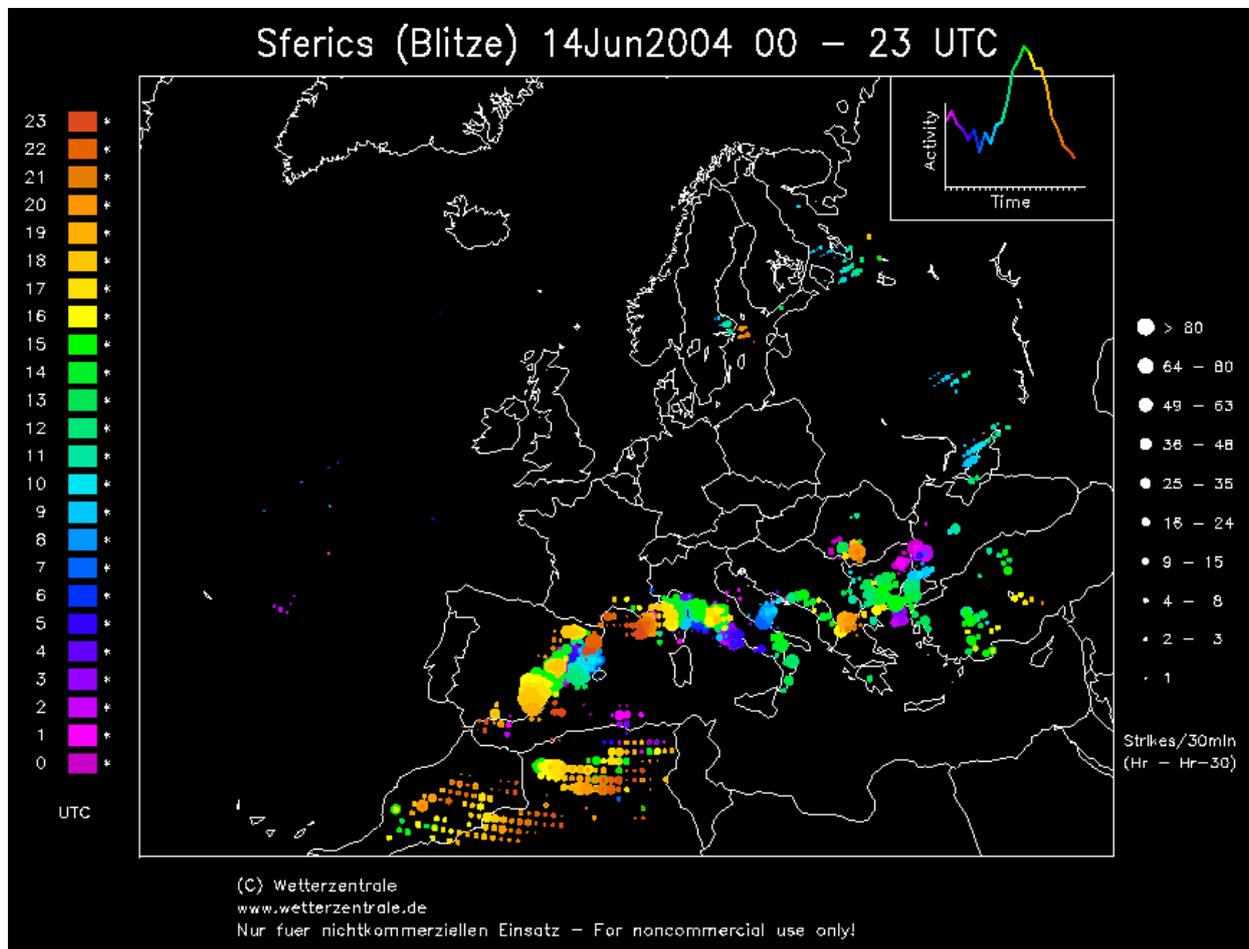
In the following map of 00:00h of the day June 15th, the cold air bubble already affected the Spanish East with a temperature of about -20°C at 5680m. The isobars at level of the sea show an anticyclone to the W of the British Islands forming a small low in the Gulf of Cadiz, situation that will end up giving humid East winds in the Mediterranean façade helping the storm formation

Init : Tue,15JUN2004 00Z Valid: Tue,15JUN2004 00Z
 500 hPa Geopot.(gpm), T (C) und Bodendr. (hPa)

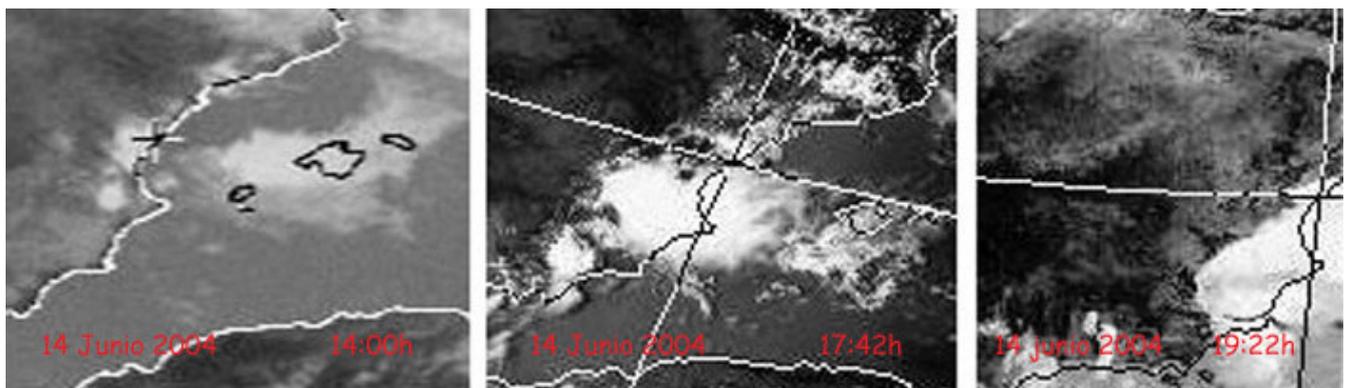


Daten: GFS-Modell des amerikanischen Wetterdienstes
 (C) Wetterzentrale
 www.wetterzentrale.de

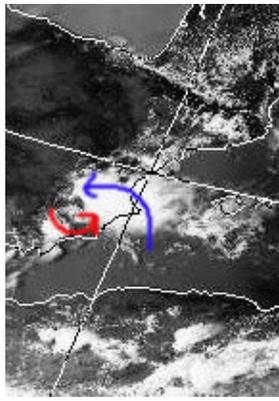
In the following ray map we verified how the storms advanced by the Mediterranean façade from North to South while the cold air moved (at 10 UTC they affected Catalonia and at 19 UTC Murcia)



If we paid attention to the satellite Meteosat images for that day, the storms began to form at 14:00h, having formed at 17:42h a stormy structure with an apparently cyclonal turn and South displacement:



This structure was re-fed with the humid East air with marine origin, giving the maximum of precipitations in its North flank.



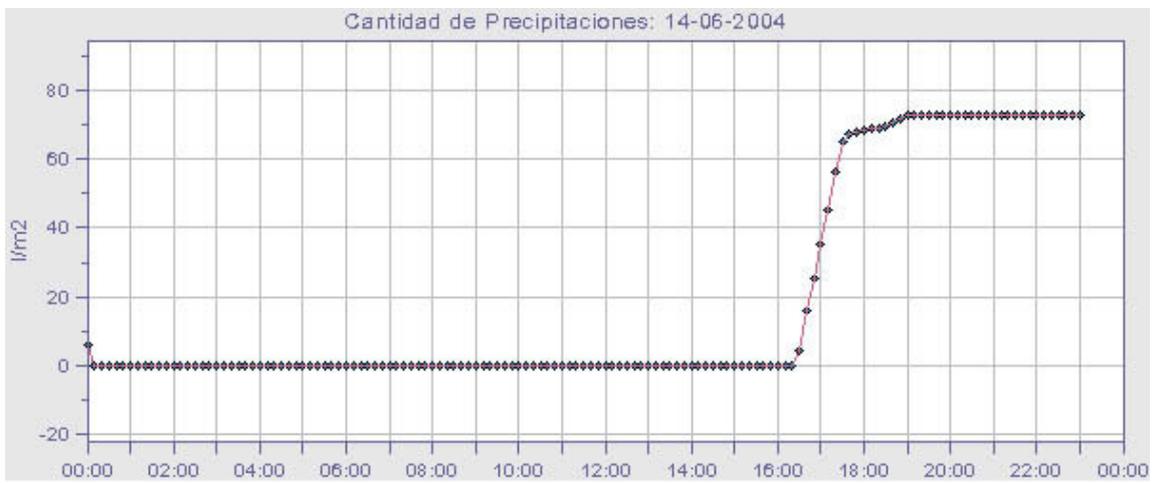
Description of the storm

About 15:30h somebody gather information, from Requena (80 km to the N of Almansa) about the formation of a convective cell with a fast development to the South of his position (Albacete part of Manchuela) with displacement towards Almansa. The wind there was from the East, taking to the stormy nucleus great cloudy fronts with marine origin that were fattening the storm.

The sky was putting very dark in Almansa while "the monster" advanced towards us. The wind, which had blown all the morning from SW, turned to E-SE just in the beginning of the storm at 16:20h. I have observed that when this happens, the storms are usually violent, because the humid East wind re-feed them.

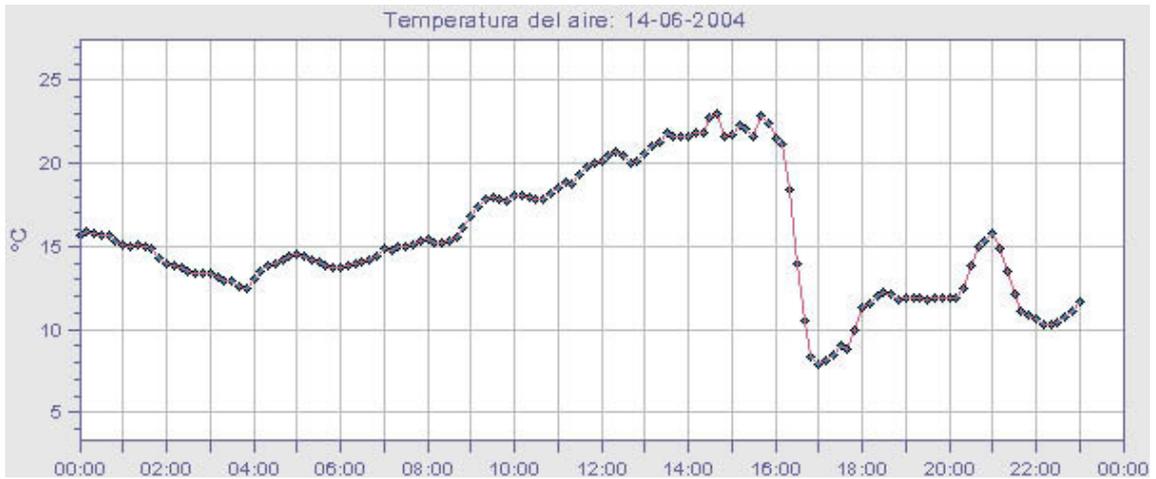
About 16:20 h it began to rain of more and more intense form, registering a precipitation of 60 l/m² between 16:30h and 17:30h and a total of 73 l/m² until 19:00h.

Precipitation graph of the weather station of the DGT in Almansa:



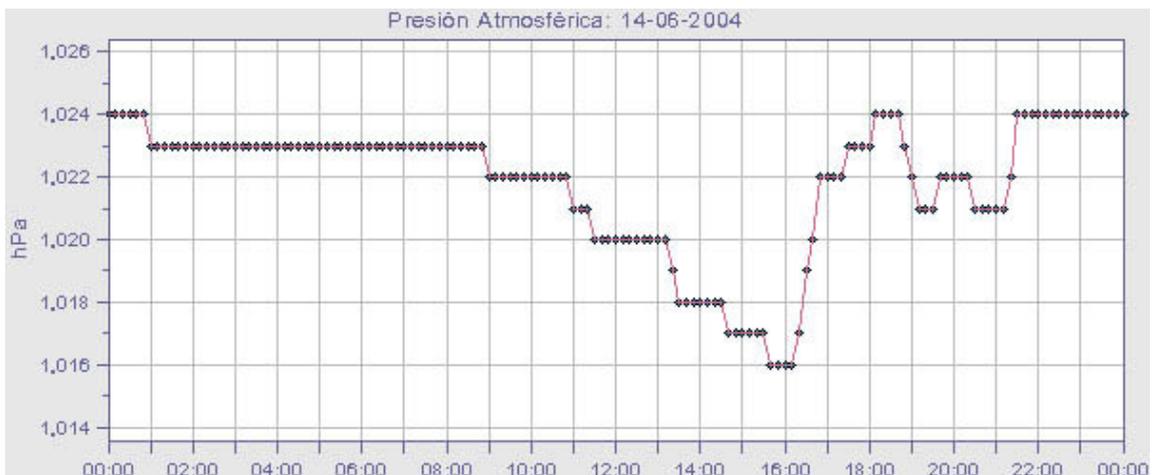
The temperature fell 13°C in 40 minutes (from 21°C at 16:10h to 8°C at 16:50h)

Graph of temperature of the weather station of the DGT in Almansa:



The atmospheric pressure increased spectacularly due to the descendent currents that the storm generated, registering an increase of 6 mb in 40 minutes (from 1016 mb at 16:10h to 1022 mb at 16:50h)

Graph of the atmospheric pressure of the weather station of the DGT in Almansa:



Accompanying rain, a strong electrical apparatus, intense wind gusts and a strong hailstorm as years ago it were not lived in the city. It was falling stones as large as marbles, since 16:40h and approximately during one hour, mixed with the torrential rain that fell.

The strong hailstorm made be in danger cars, glasses and what was in his way.

Soon, the fields covered with a fine white layer. It seemed like it had snow.

Image and video of the hail (*Click on the photo to download the video*)



Video 2 (*Download*)

The streets began to fill of water, forming real urban rivers.

The sewage system could not gather all the water that fell, apart from the great amount of dead leaves and hail that took the flood, this finished obstructing the sewage system.

The more affected zone was the low part of the city where it was accumulated all the water that descended from the South zone.

Next, I put some photos of the state that displayed that day the streets of the city:

Photo of Corredera Street. People tried that the water did not enter its commerces. There were so many flaws by flooded lowers, spoiled cars, flooded premises... According to testimonies, in some premises of the city the water entered in torrents by the toilets. The covers of the sewage system jumped by the pressure of the water:



Photo of Jose Rodríguez Avenue in downtown. The hail that fell was floating on the water.



Photo of SUP 2 zone: Difficulties to walk by the city. In some places the water reached to half meter of height.



Photo of the ring road: Many problems to circulate around the routes of access of the city.



The destructions in the field were important, with losts of until the 100 % in some cultures.

Another pictures of the unforgettable afternoon of the June, 14th, 2004:





Adjacent cities like the Font de la Figuera (Valencia) with 72 l/m², Villena (Alicante) with 45 l/m² or Yecla (Murcia) with 21 l/m² also supported intense hailstorms.

An interesting phenomenon, from the Meteorology point of view, but with bad consequences because of the losses and destructions.

You can see impressive images of the hailstorm and the floods happened in Almansa in the following video that recorded the local television of the city:

Videos of the storm in TV Almansa:

[Video 3](#) (*Download*)

The news:

[Video 4](#) (*Download*)

Damages in agriculture:

[Video 5](#) (*Download*)

Almansa
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October, 5th, 2004

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