



# September 2012 Forecast for Pakistan



# ECMWF EPS-Monthly Forecasting System

## Precipitation anomaly

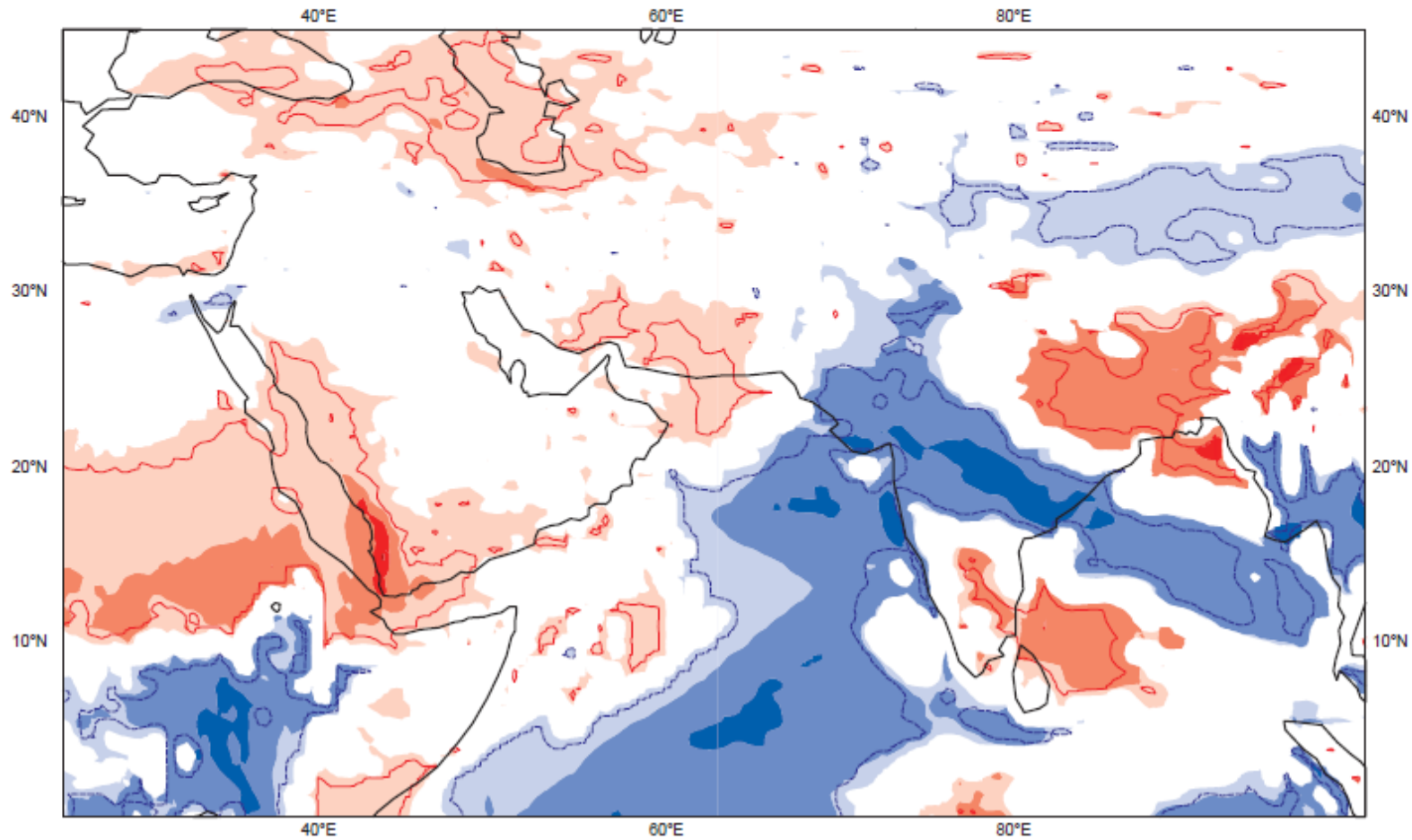
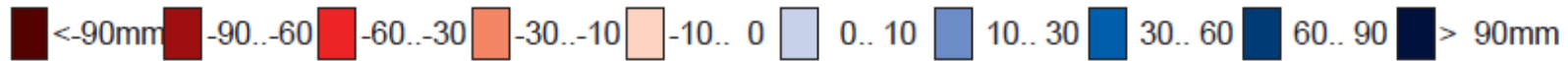
Forecast start reference is 23-08-2012  
ensemble size = 51 , climate size = 100

Day 12-18

03-09-2012/TO/09-09-2012

Shaded areas significant at 10% level

Contours at 1% level



# ECMWF EPS-Monthly Forecasting System

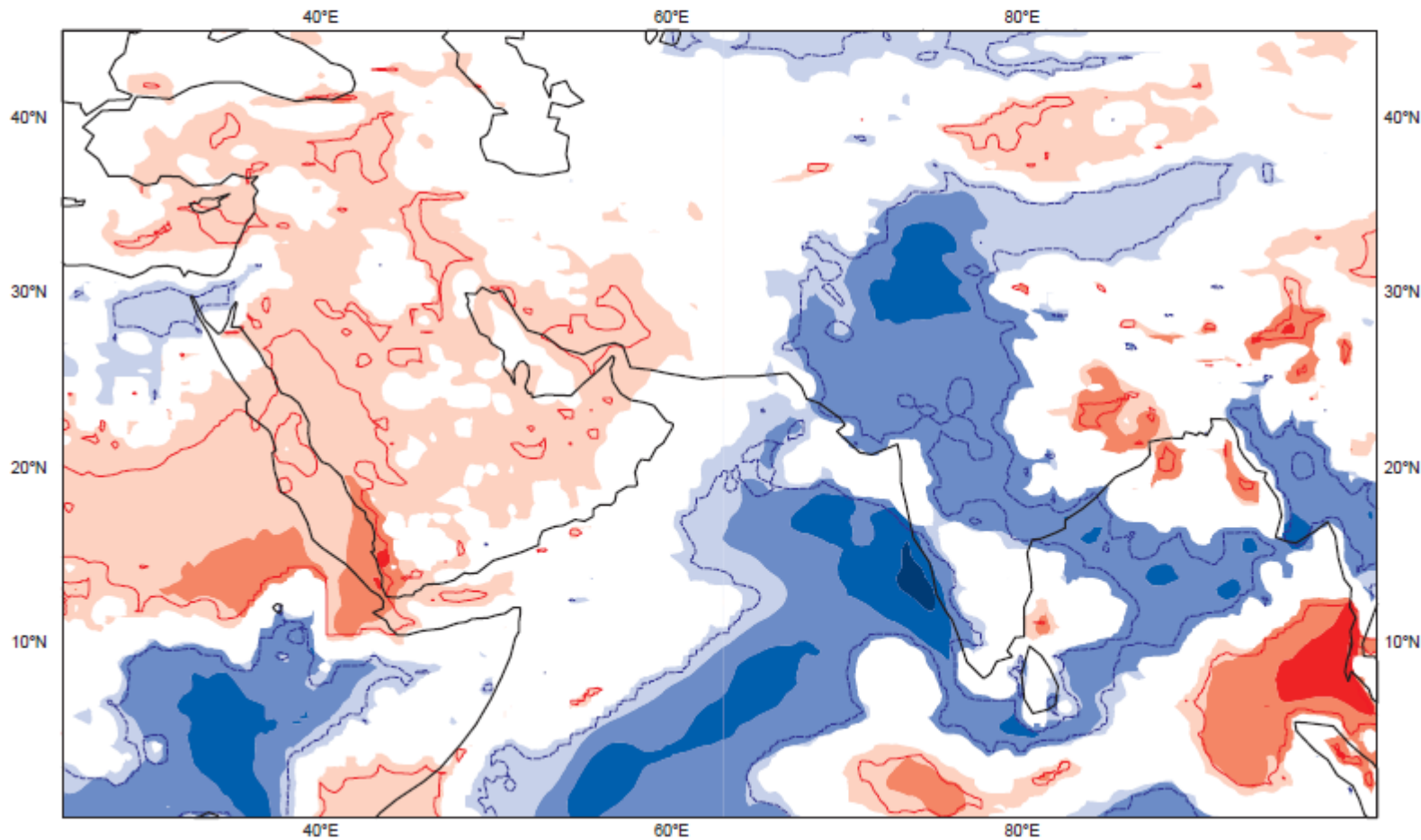
## Precipitation anomaly

Forecast start reference is 27-08-2012  
ensemble size = 51 , climate size = 100

Day 8-14

03-09-2012/TO/09-09-2012

Shaded areas significant at 10% level  
Contours at 1% level



# ECMWF EPS-Monthly Forecasting System

## Precipitation anomaly

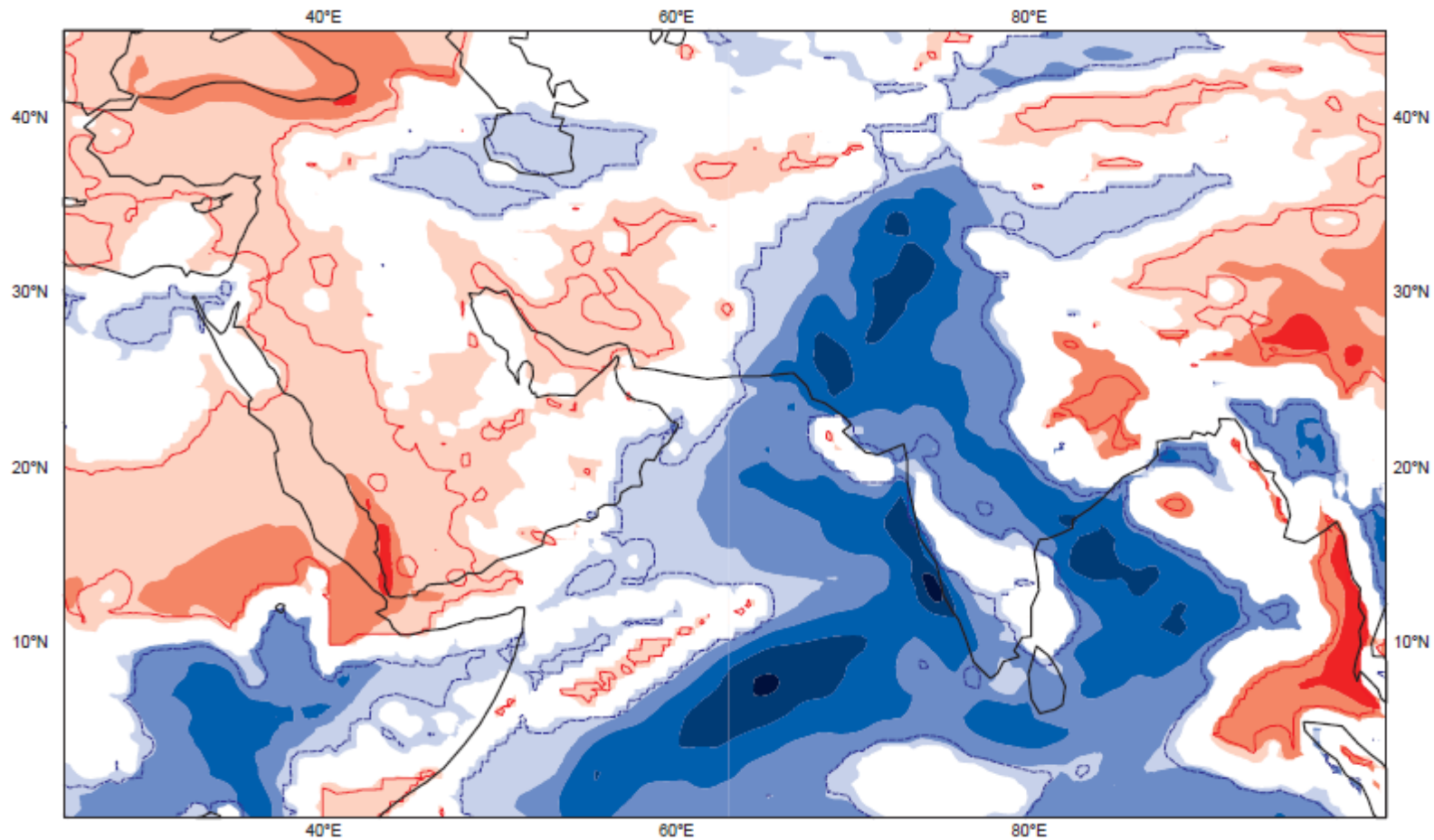
Forecast start reference is 30-08-2012  
ensemble size = 51 , climate size = 100

Day 5-11

03-09-2012/TO/09-09-2012

Shaded areas significant at 10% level

Contours at 1% level



# ECMWF EPS-Monthly Forecasting System

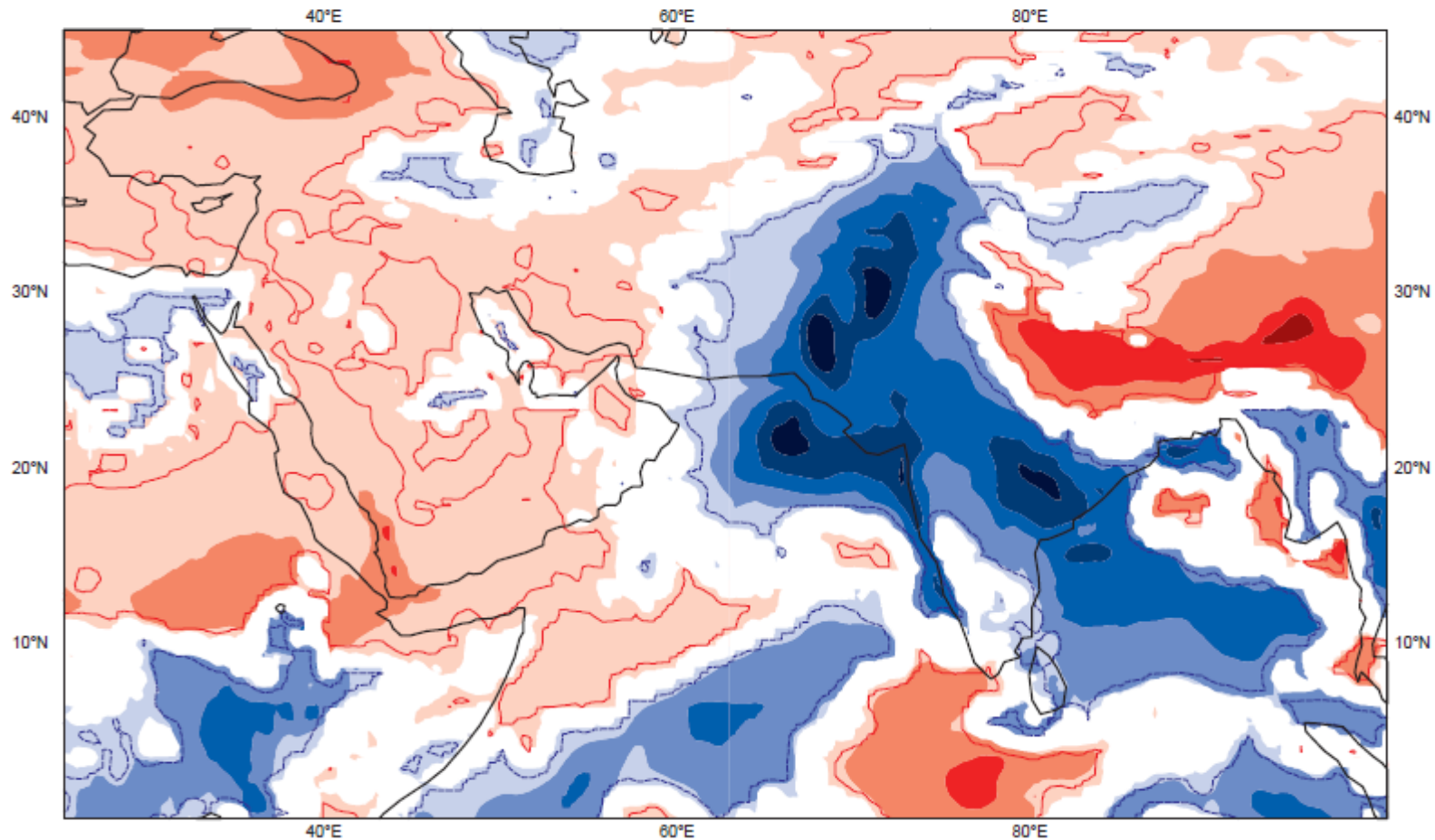
## Precipitation anomaly

Forecast start reference is 03-09-2012  
ensemble size = 51 , climate size = 100

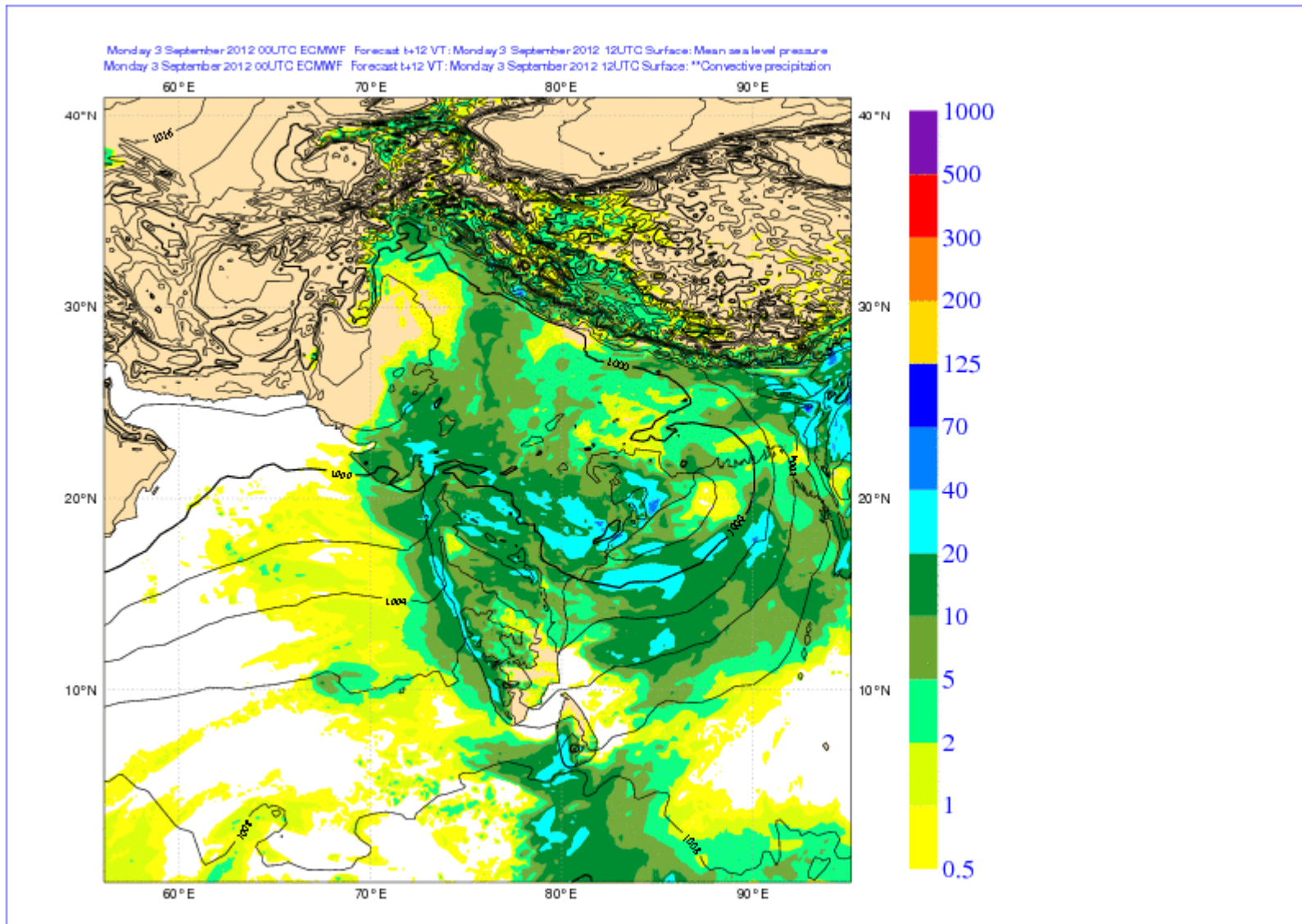
Day 1-7

03-09-2012/TO/09-09-2012

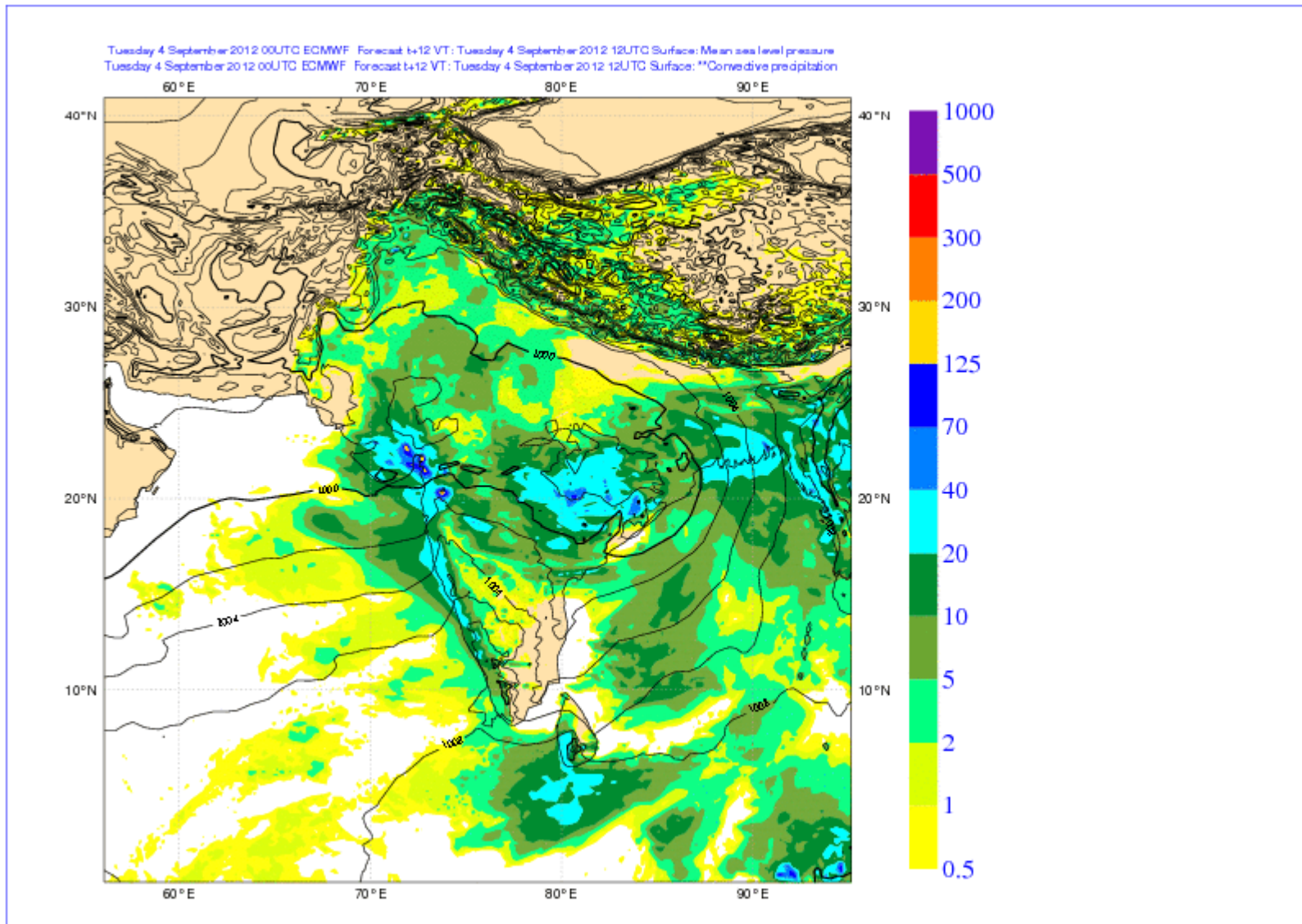
Shaded areas significant at 10% level  
Contours at 1% level



# T1279 based on 3/Sept/2012; 00 UTC: MSL and 12 hours accumulated precip

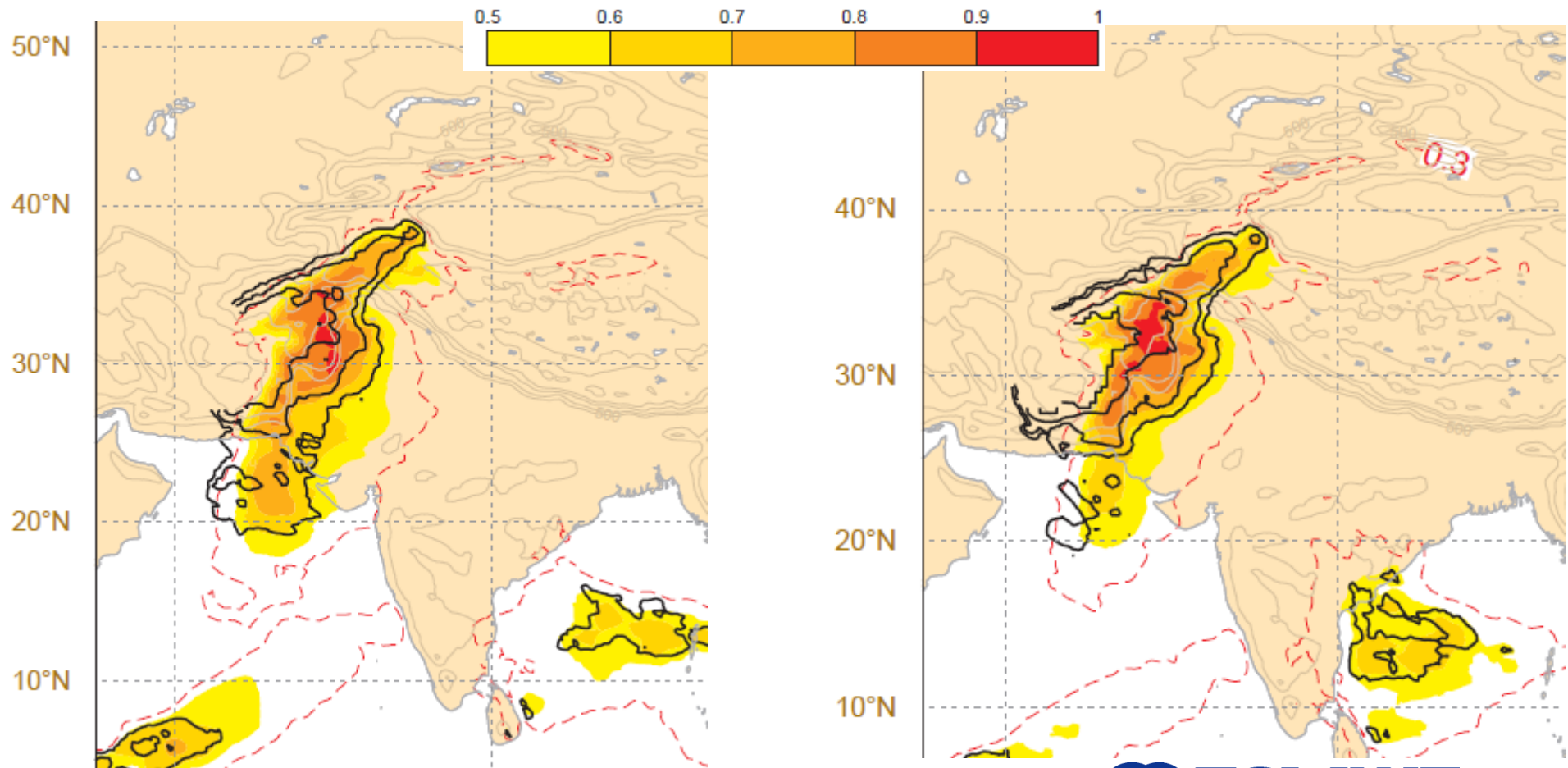


# T1279 based on 4/Sept/2012; 00 UTC: MSL and 12 hours accumulated precip



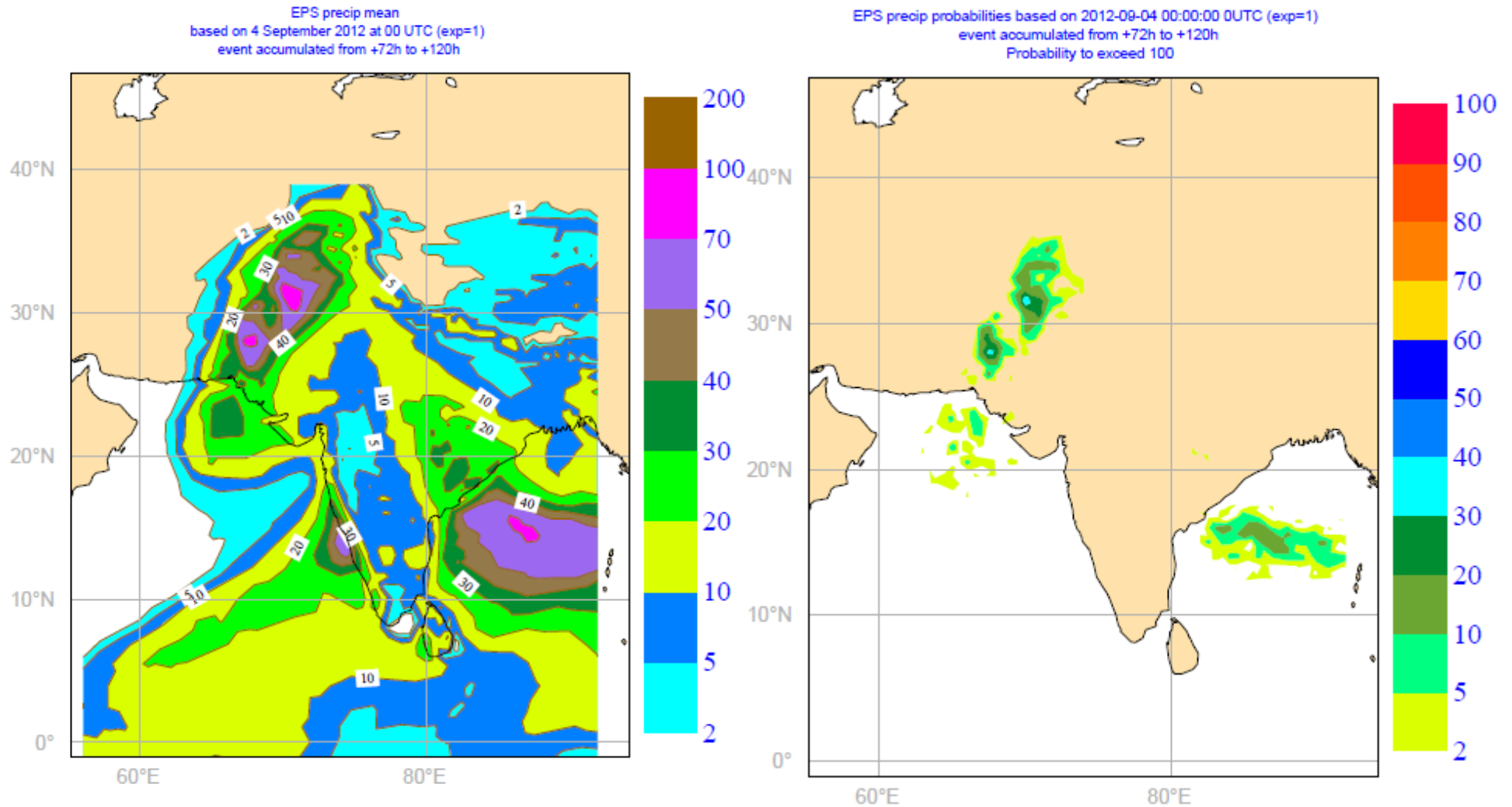
Tue 04 Sep 2012 00UTC @ECMWF t+48-120h VT: Thu 06 Sep 2012 00UTC - Sun 09 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0,1,5,10,15) for total precipitation

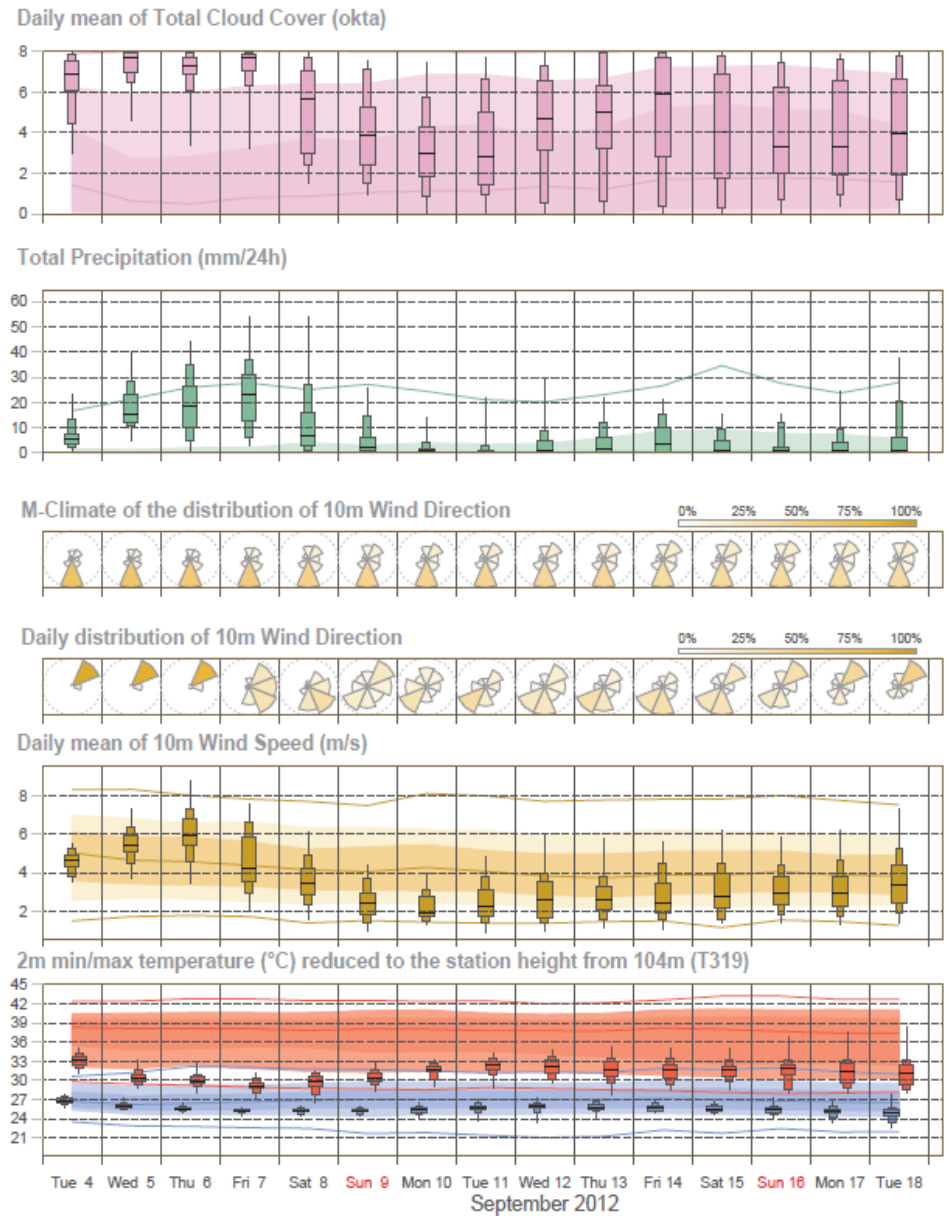
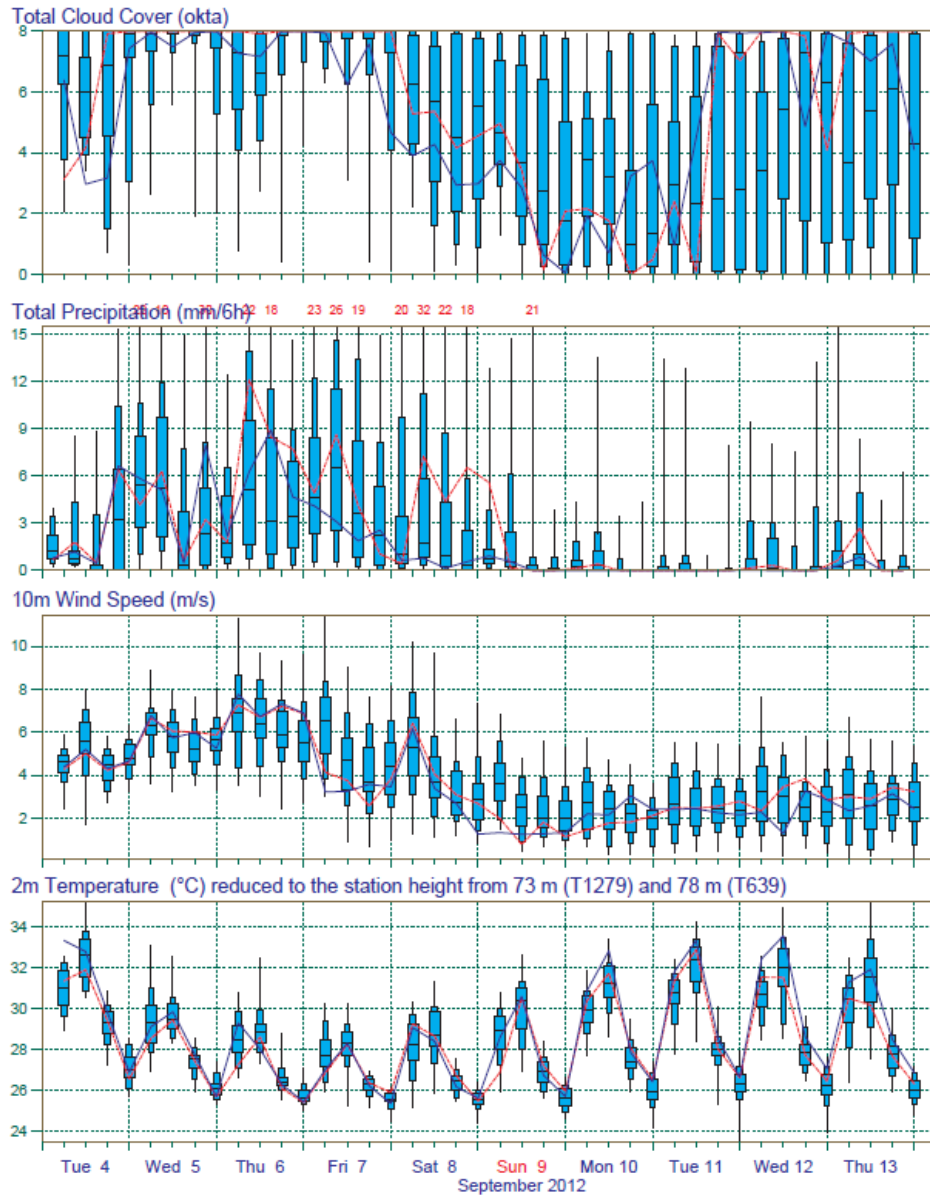
Tue 04 Sep 2012 00UTC @ECMWF t+72-144h VT: Fri 07 Sep 2012 00UTC - Mon 10 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0,1,5,10,15) for total precipitation



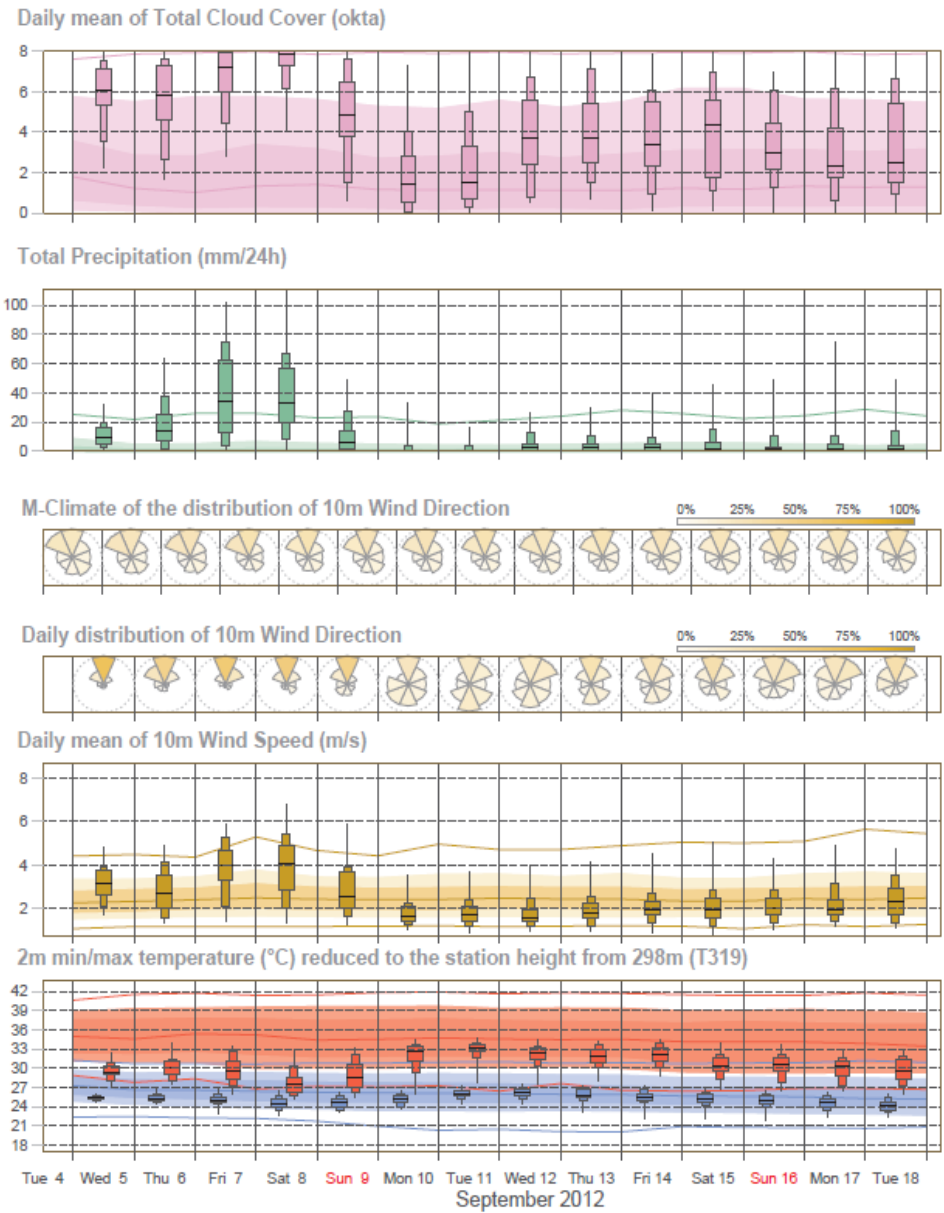
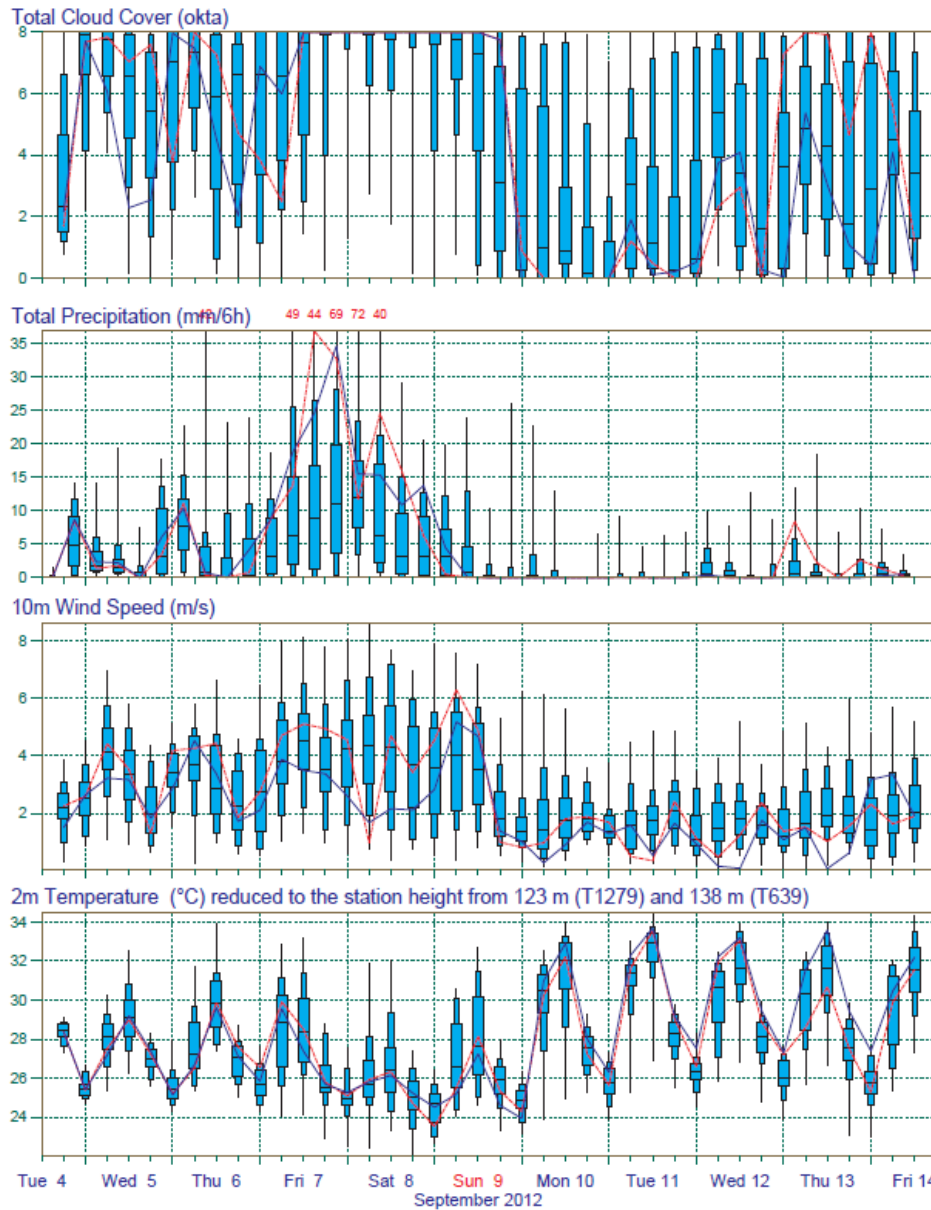


# EPS based on 4/Sep/2012; 00 UTC: D+3 to D+5 EM and probability of precip > 100 mm

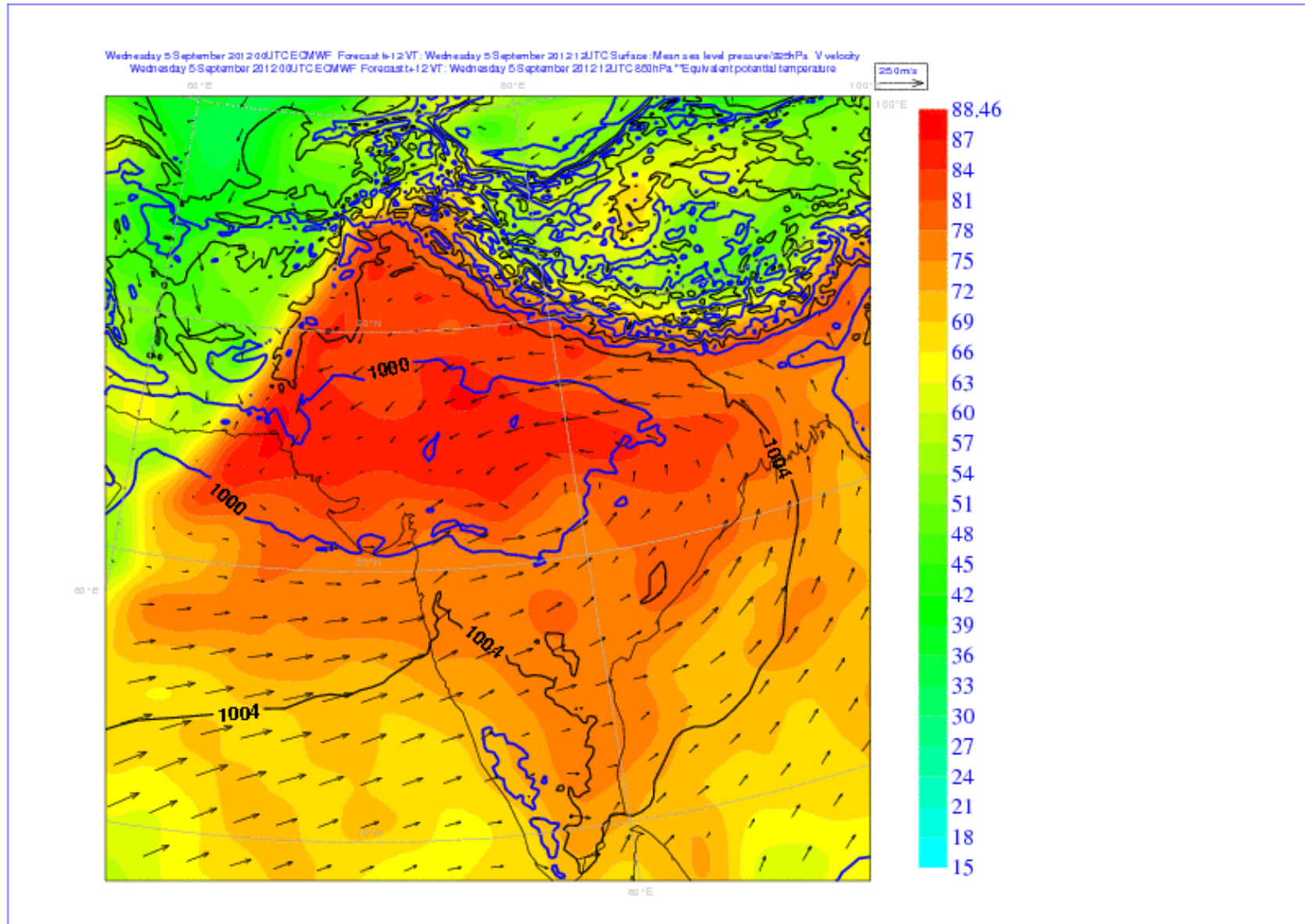




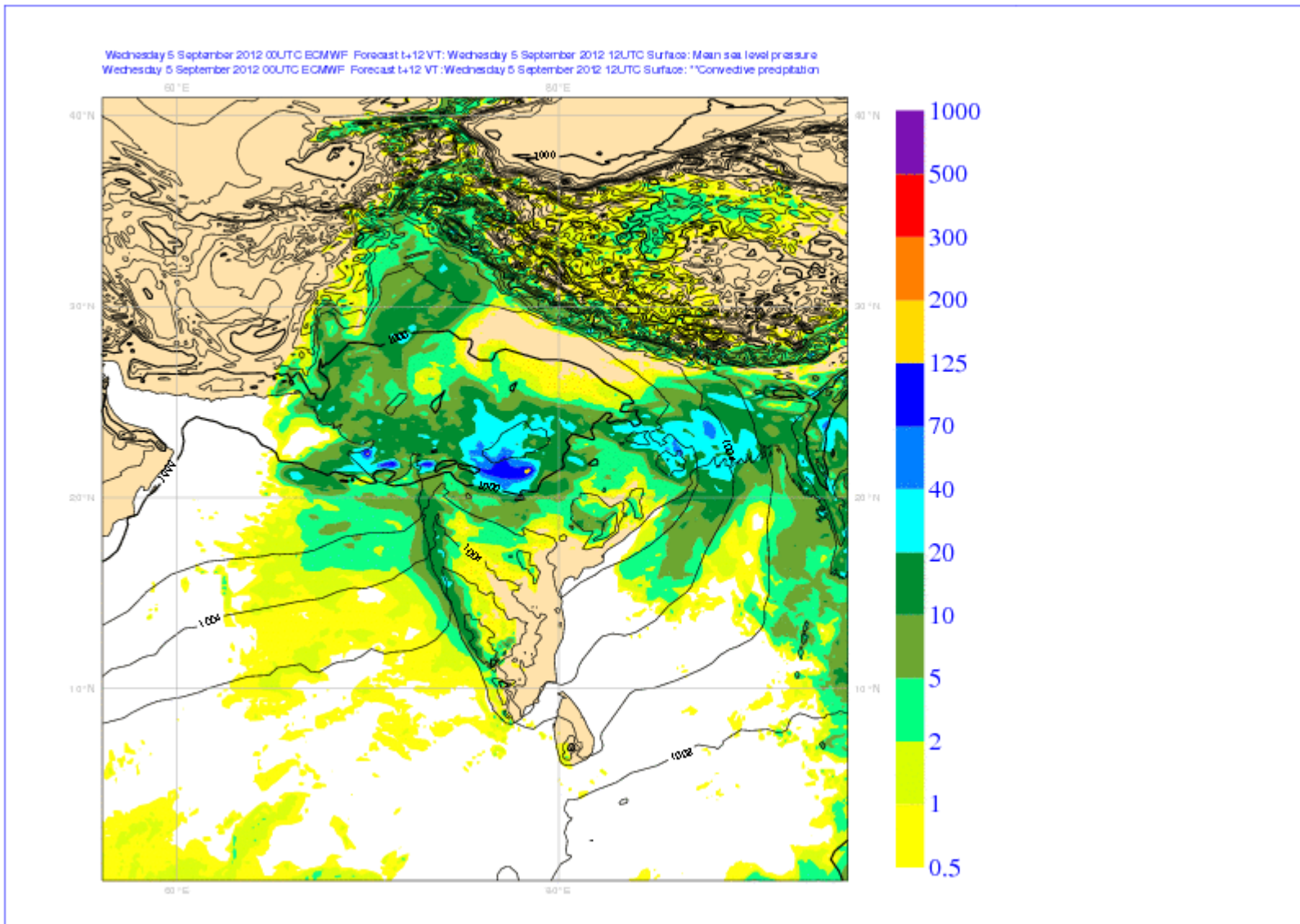
**Faisalabad**



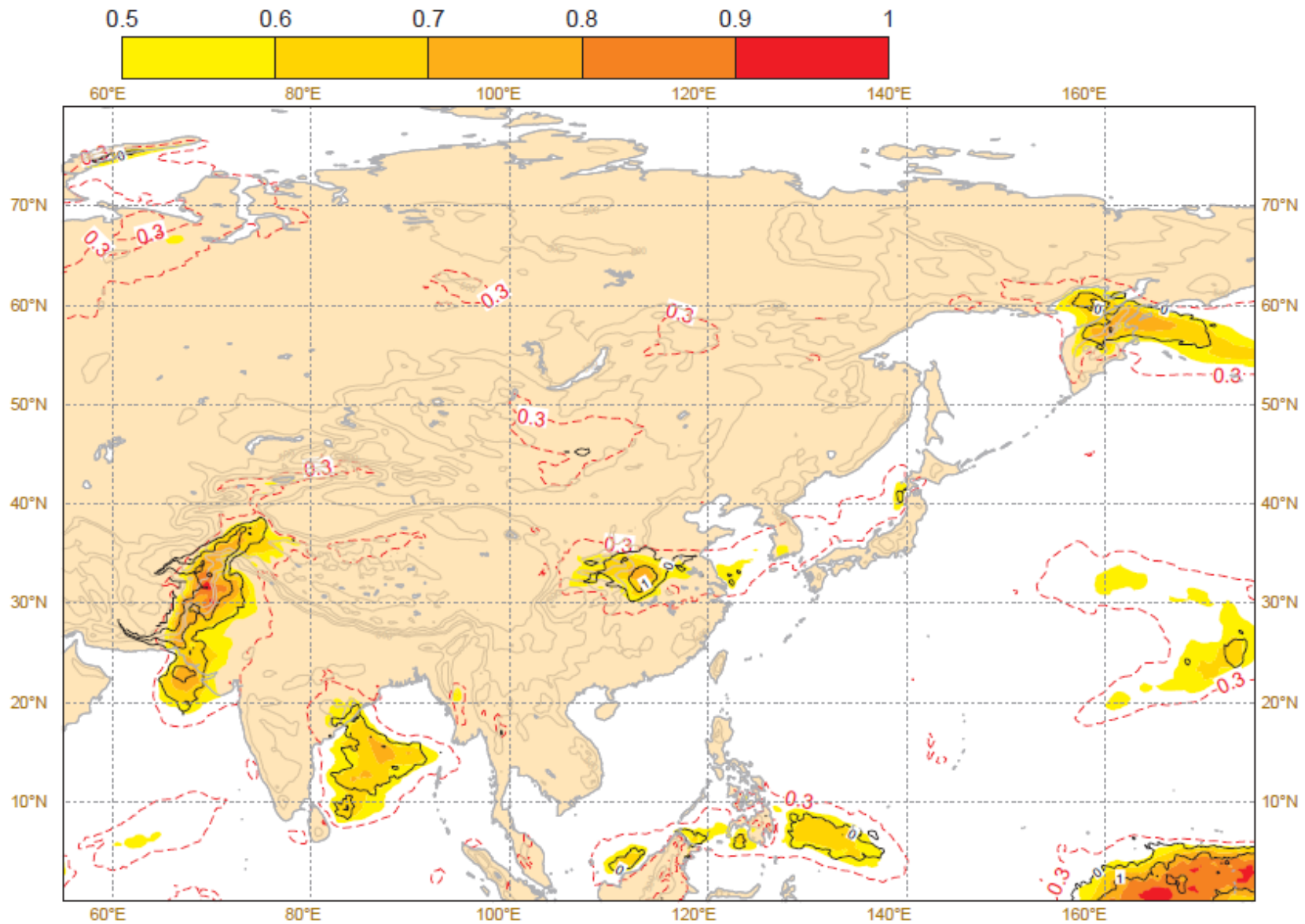
# T1279 based on 5/Sept/2012; 00 OTC : MSL,850 hPa eq pot temp and 925 hPa winds



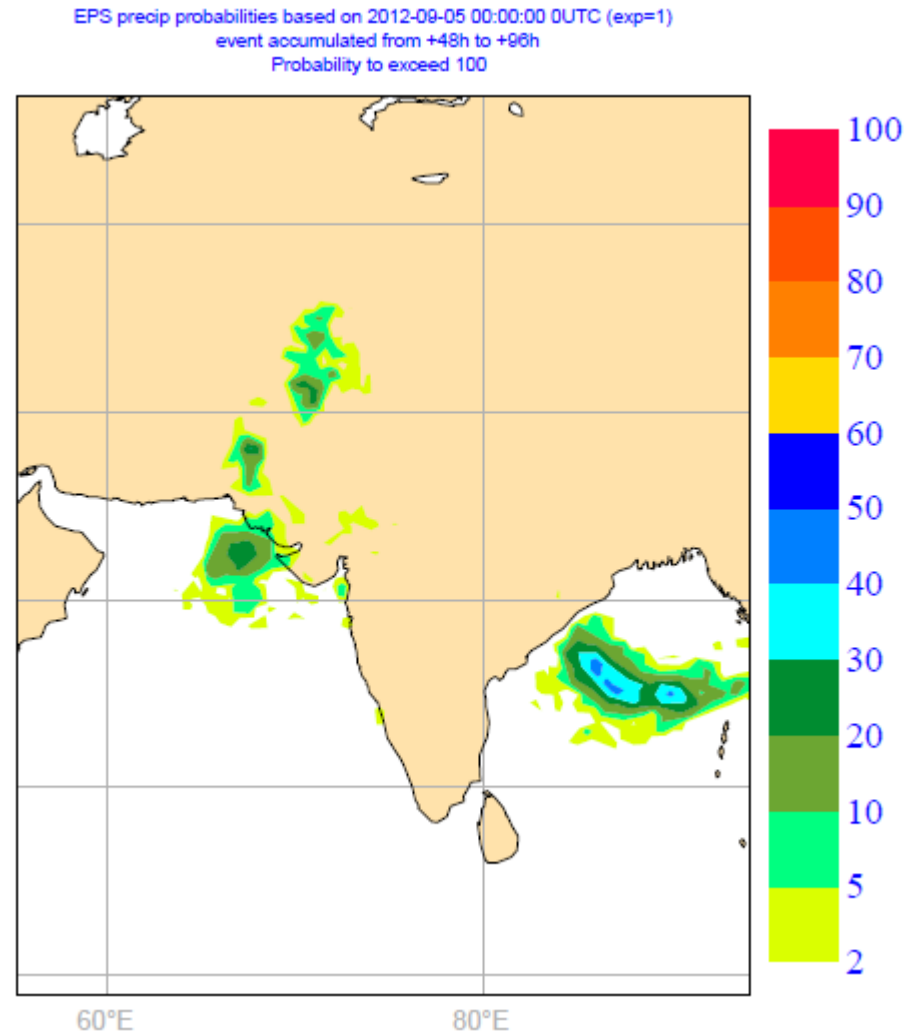
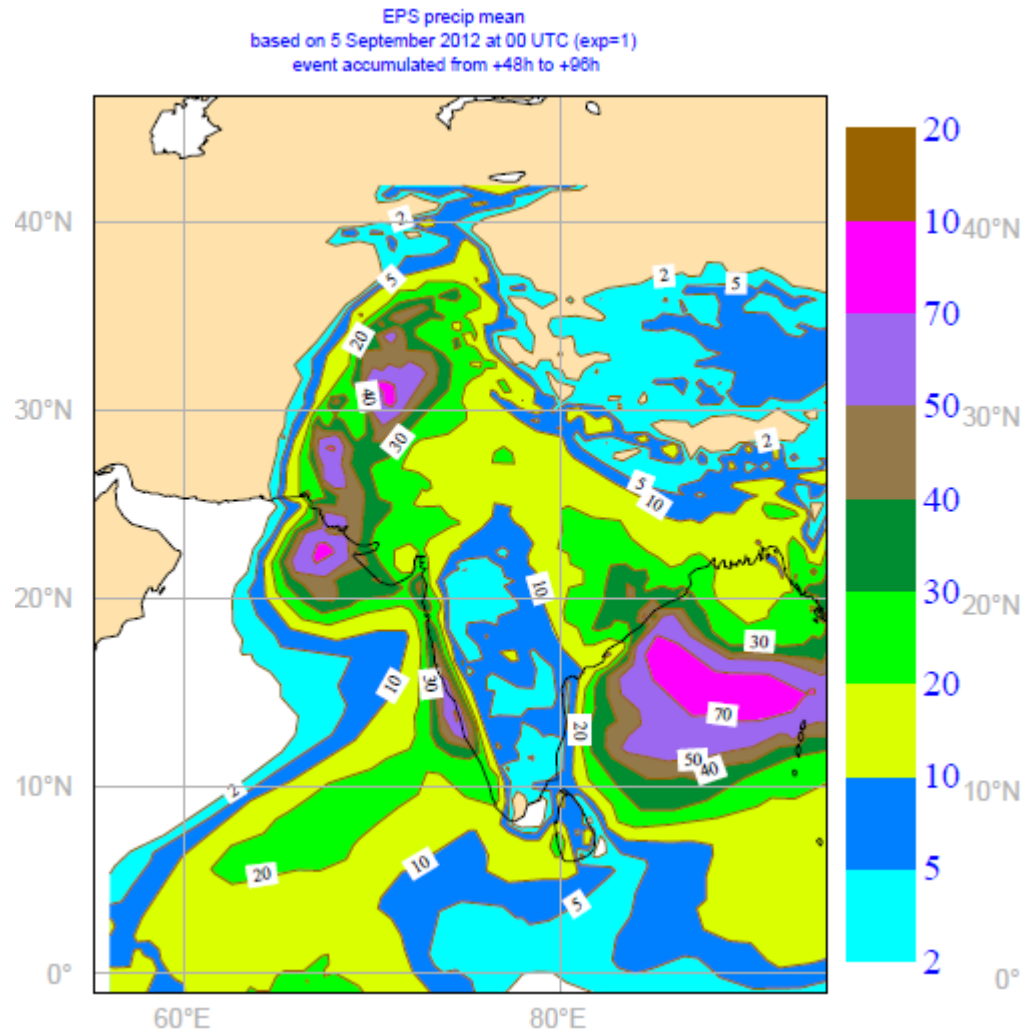
# T1279 based on 5/Sept/2012; 00 UTC: MSL and 12 hours accumulated precip



Wed 05 Sep 2012 00UTC ©ECMWF t+48-120h VT: Fri 07 Sep 2012 00UTC - Mon 10 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0,1,5,10,15) for total precipitation

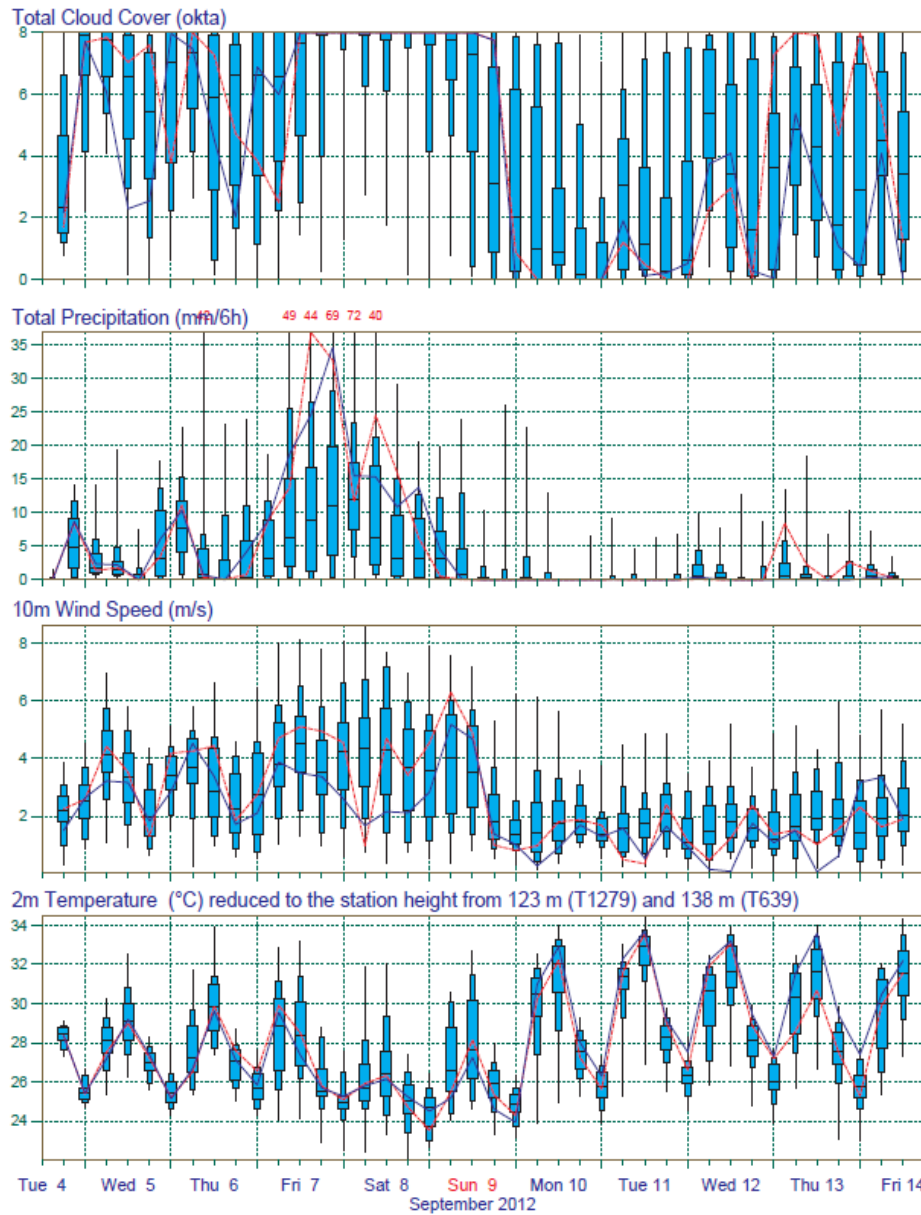


# EPS based on 5/Sep/2012; 00 UTC: D+2 to D+4 EM and probability of precip > 100 mm

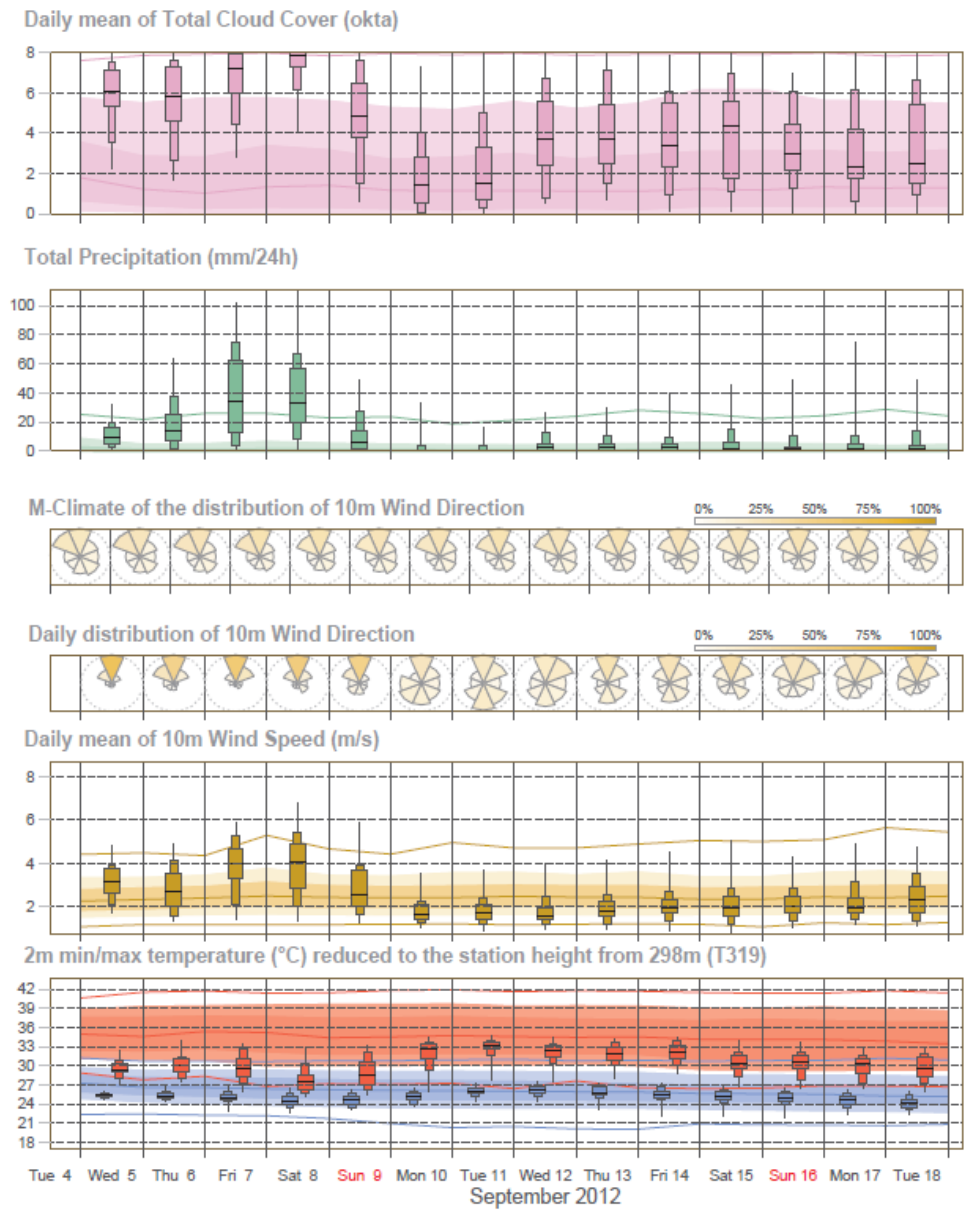


EPS Meteogram  
 31.05°N 70.72°E (EPS land point) 123 m (T1279)  
 Deterministic Forecast and EPS Distribution Tuesday 4 September 2012 12 UTC

### Faisalabad

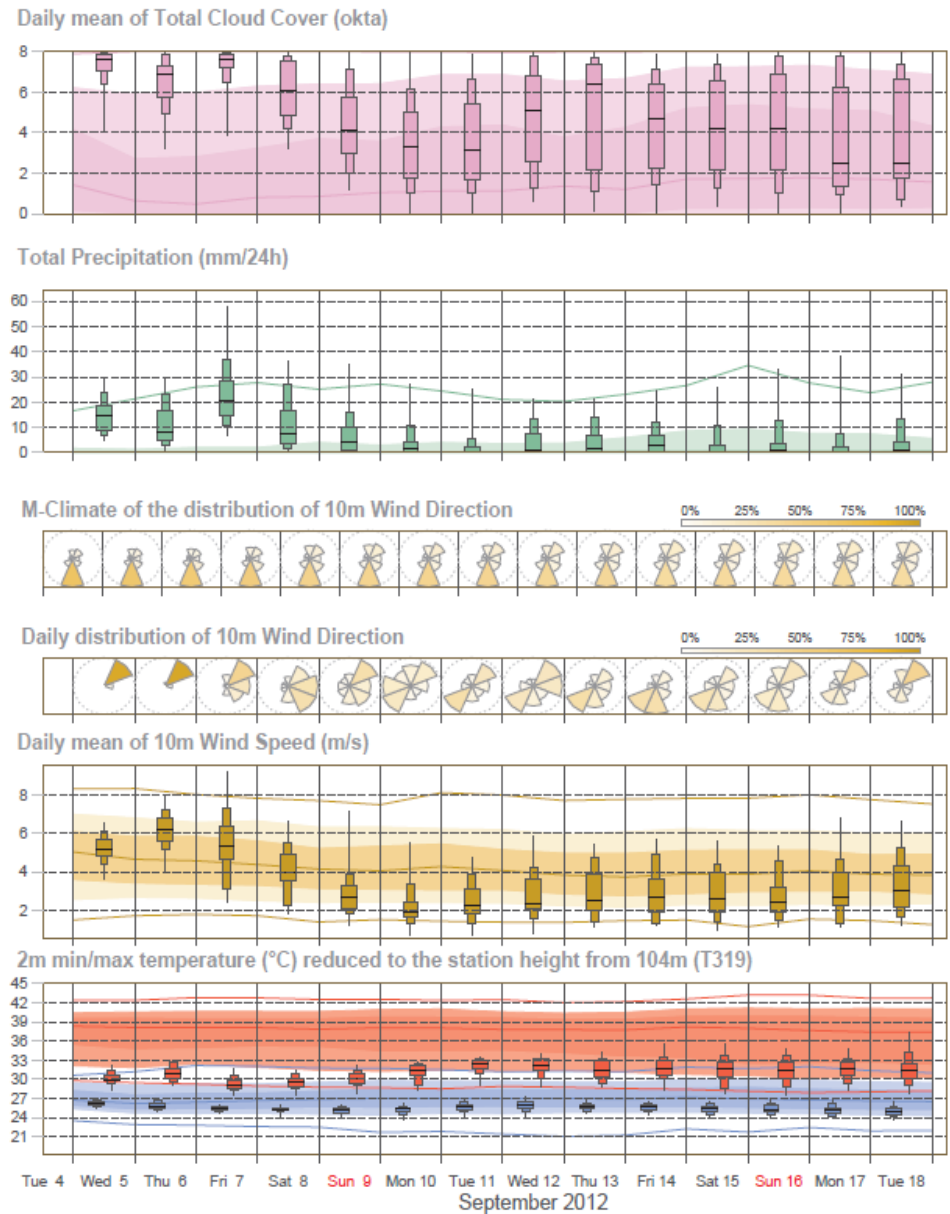
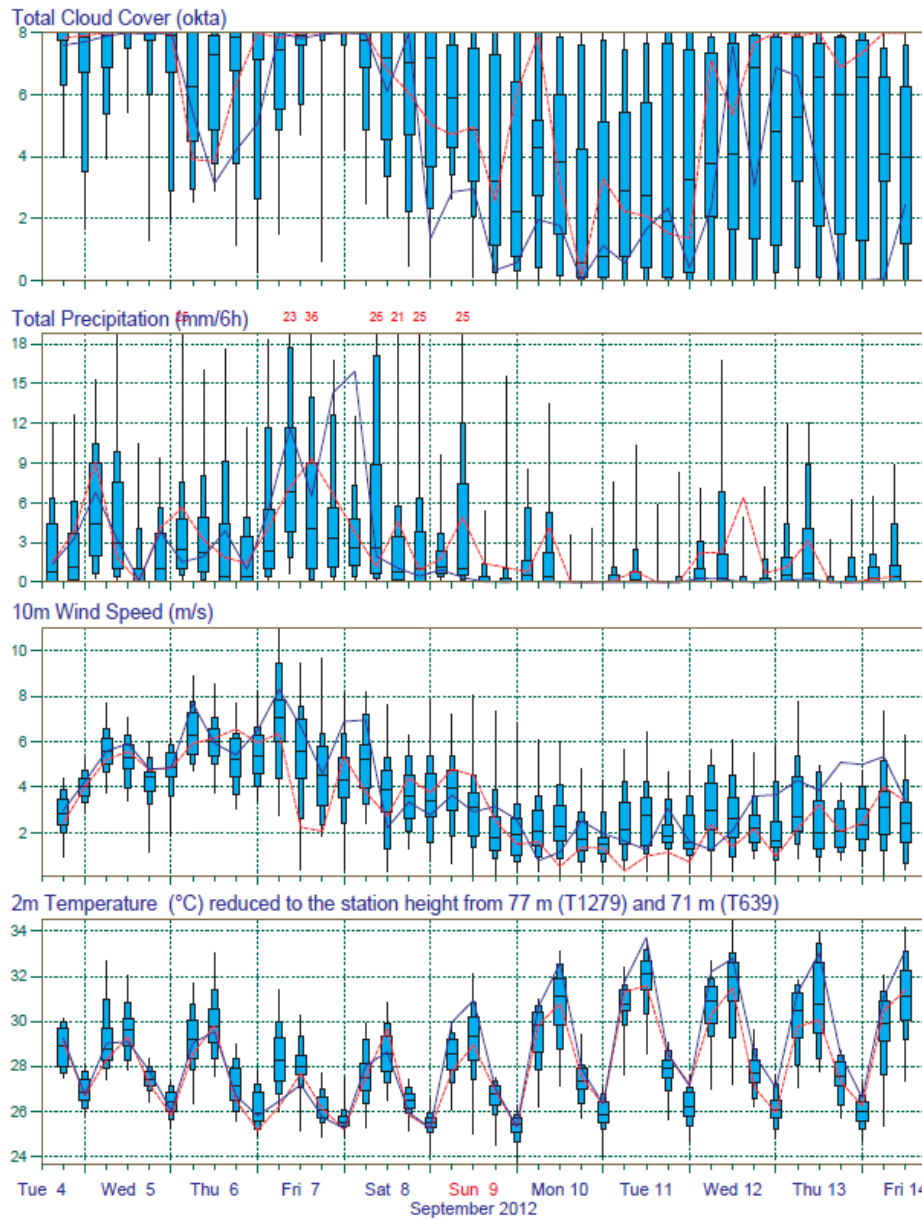


EPS Meteogram  
 31.17°N 70.63°E (EPS land point) 173 m (T639)  
 Extended Range Forecast based on EPS Distribution Tuesday 4 September 2012 12 UTC





### Rahimyar-Khan



**5/September/2012**



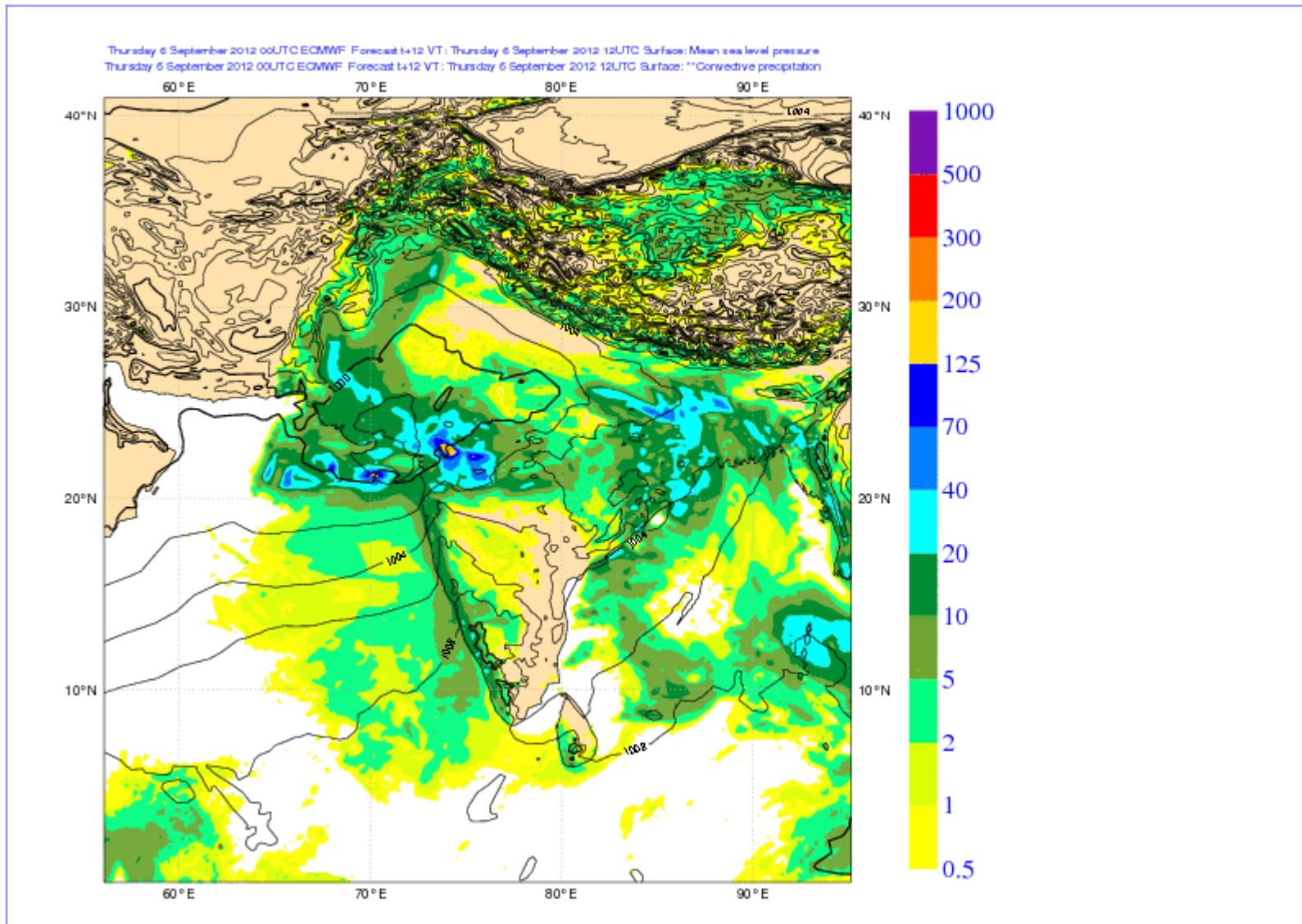
**SEVERE EVENTS IN FORECAST  
Comments**

**The precipitations are starting to produce damages in Pakistan**

**KARACHI: Monsoon rains have hit different parts of the country causing fifteen deaths in rain-related accidents Wednesday, Geo News reported. According to sources, heavy downpour in Tehsil Nasirabad of Azad Kashmir swept away seventeen people including two women and four children while the bodies of four persons were recovered. Police also confirmed the death of thirteen other persons who were drowned. Neelum Highway was blocked for sort of traffic due to land sliding while the administration has instructed the residents living at the banks of River Jhelum to shift to safer grounds.**

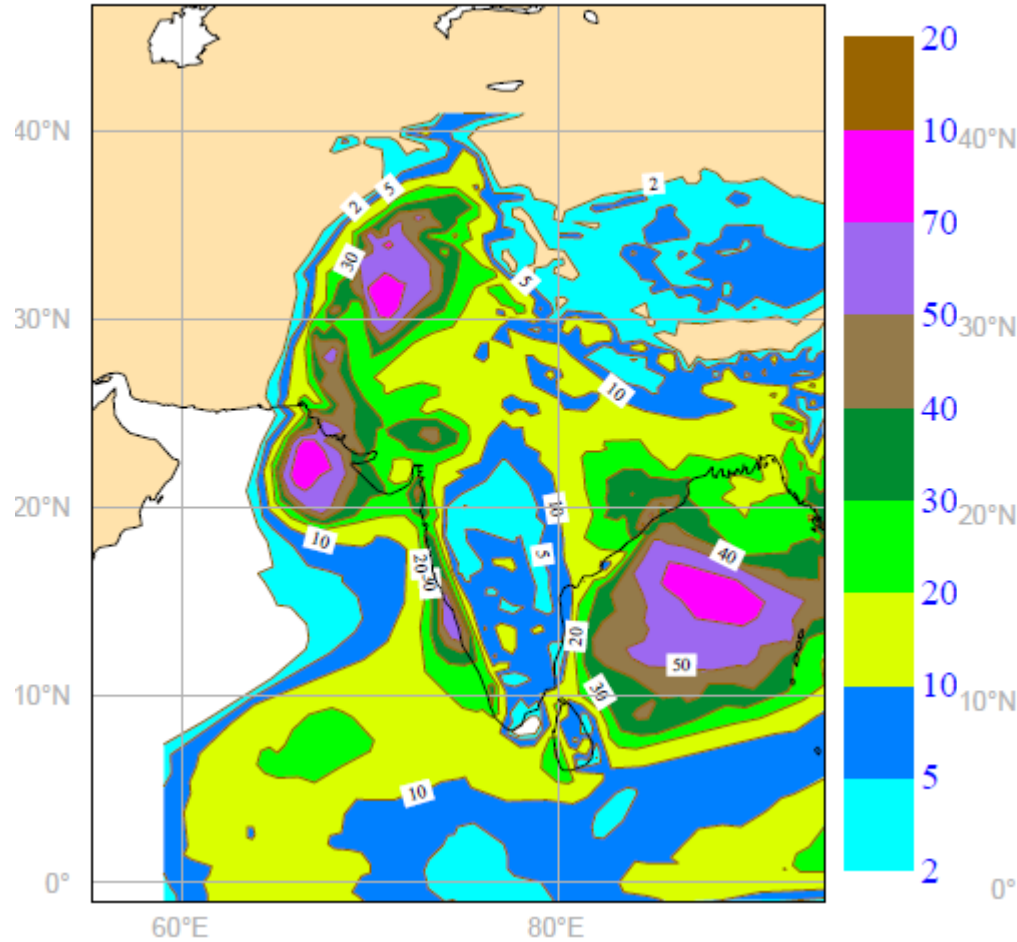
**The signal of the EPS on Pakistan is consistent with the previous days.**

# T1279 based on 6/Sept/2012; 00 UTC: MSL and 12 hours accumulated precip

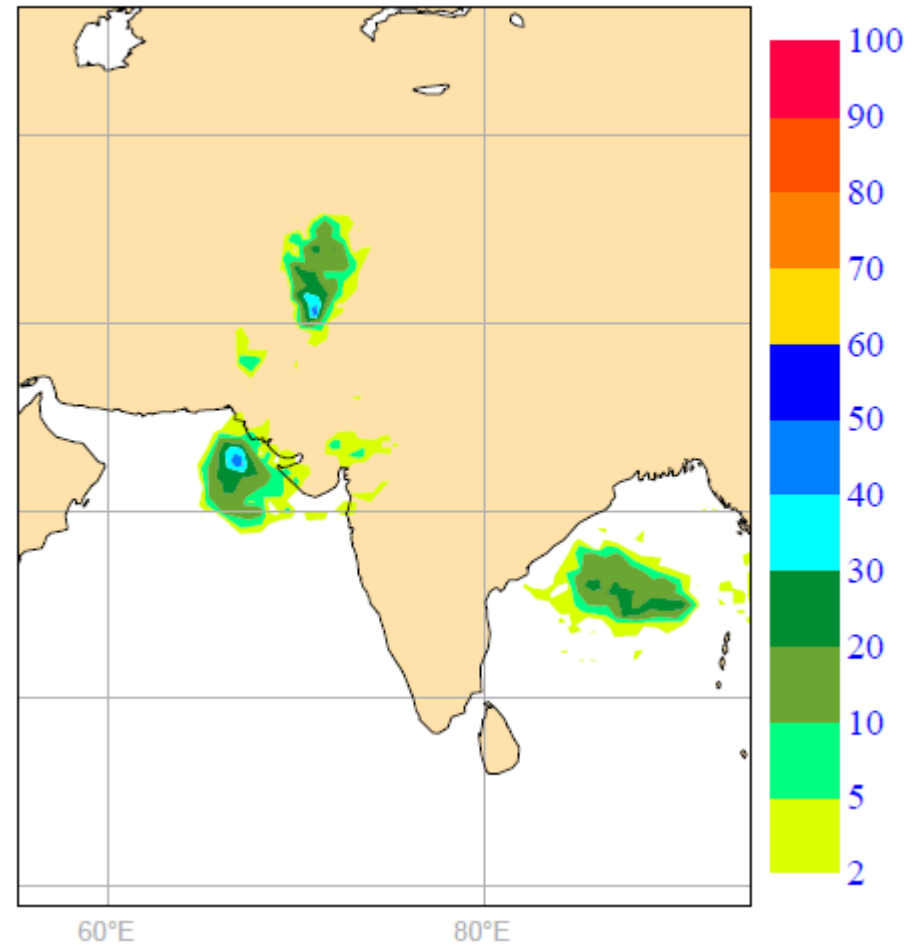


# EPS based on 6/Sep/2012; 00 UTC: D+1 to D+3 EM and probability of precip > 100 mm

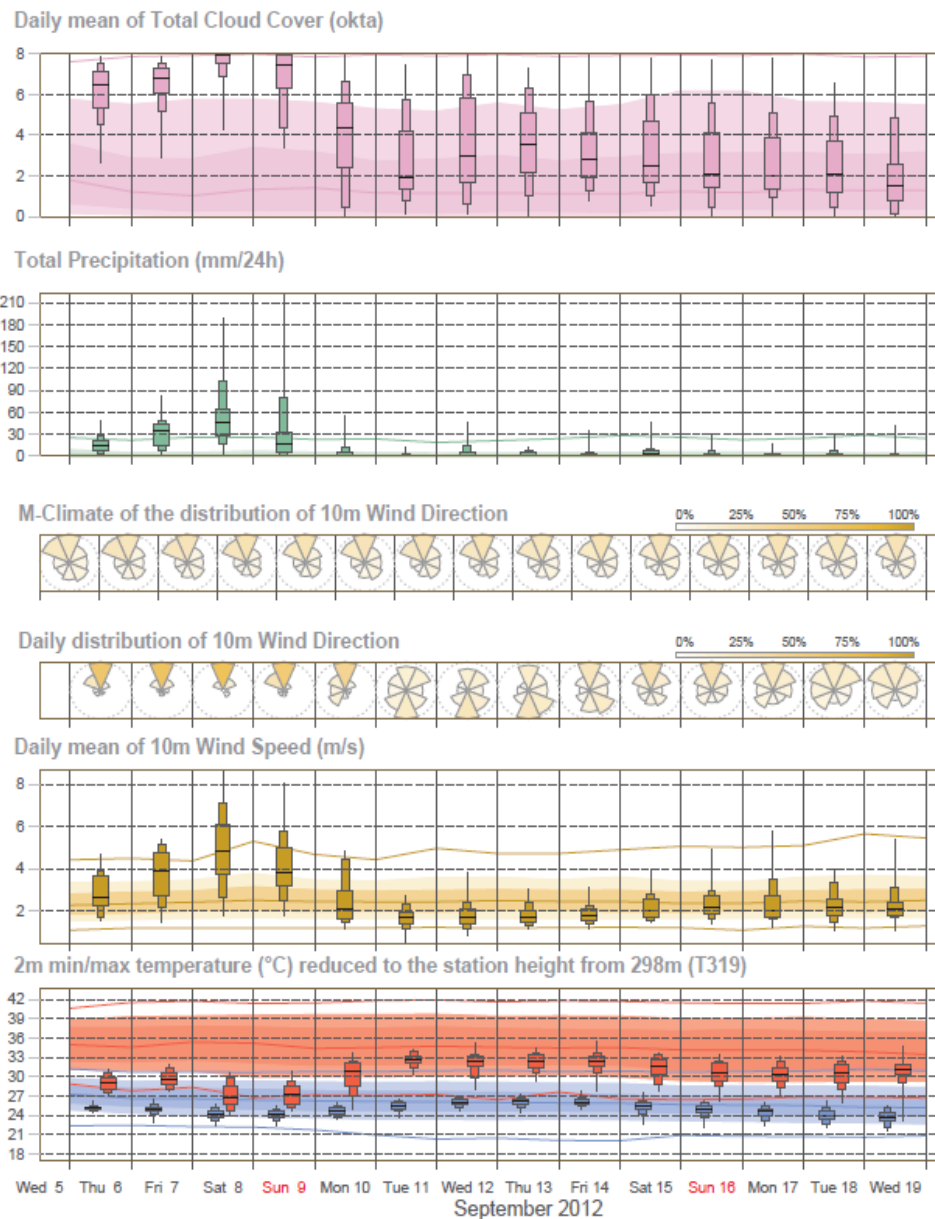
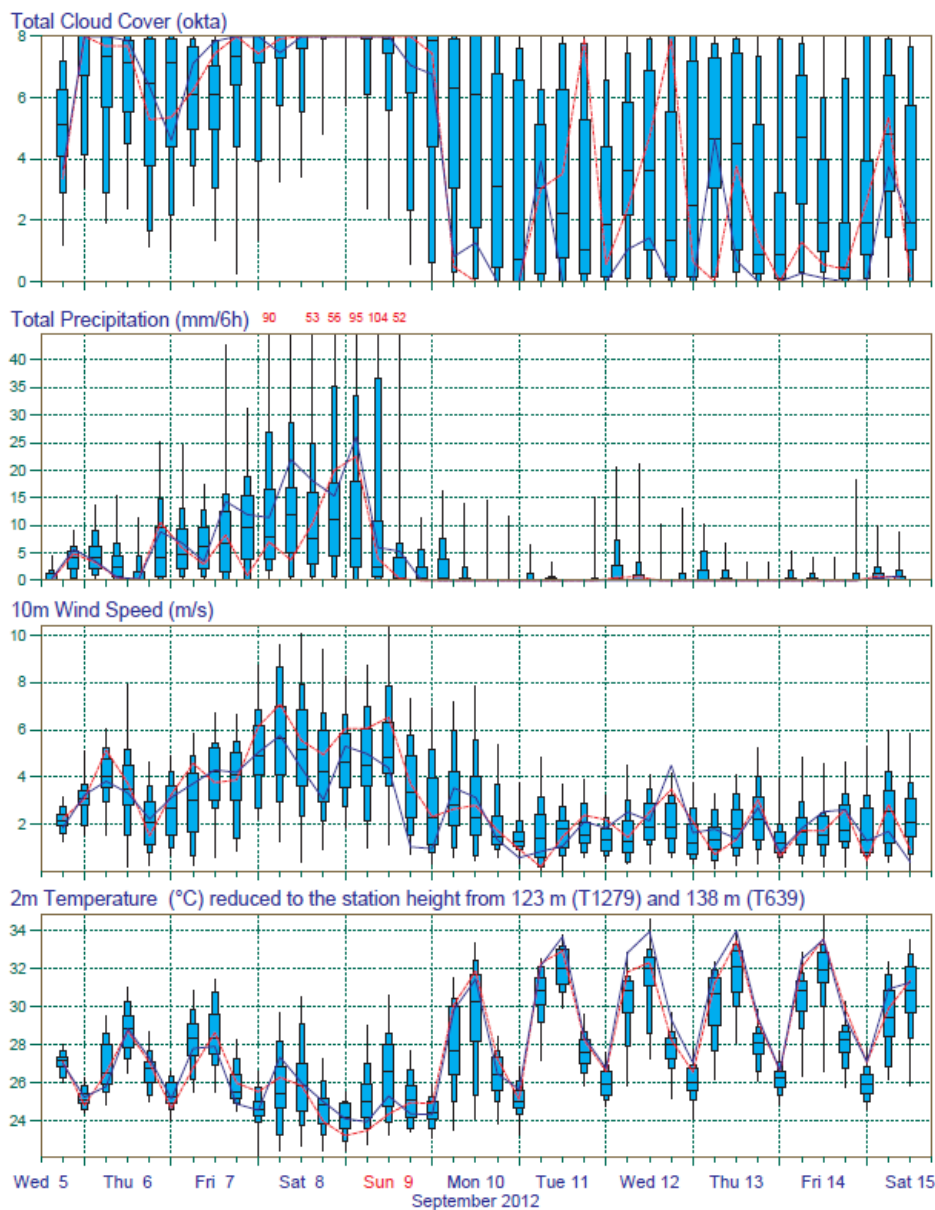
EPS precip mean  
based on 6 September 2012 at 00 UTC (exp=1)  
event accumulated from +24h to +72h



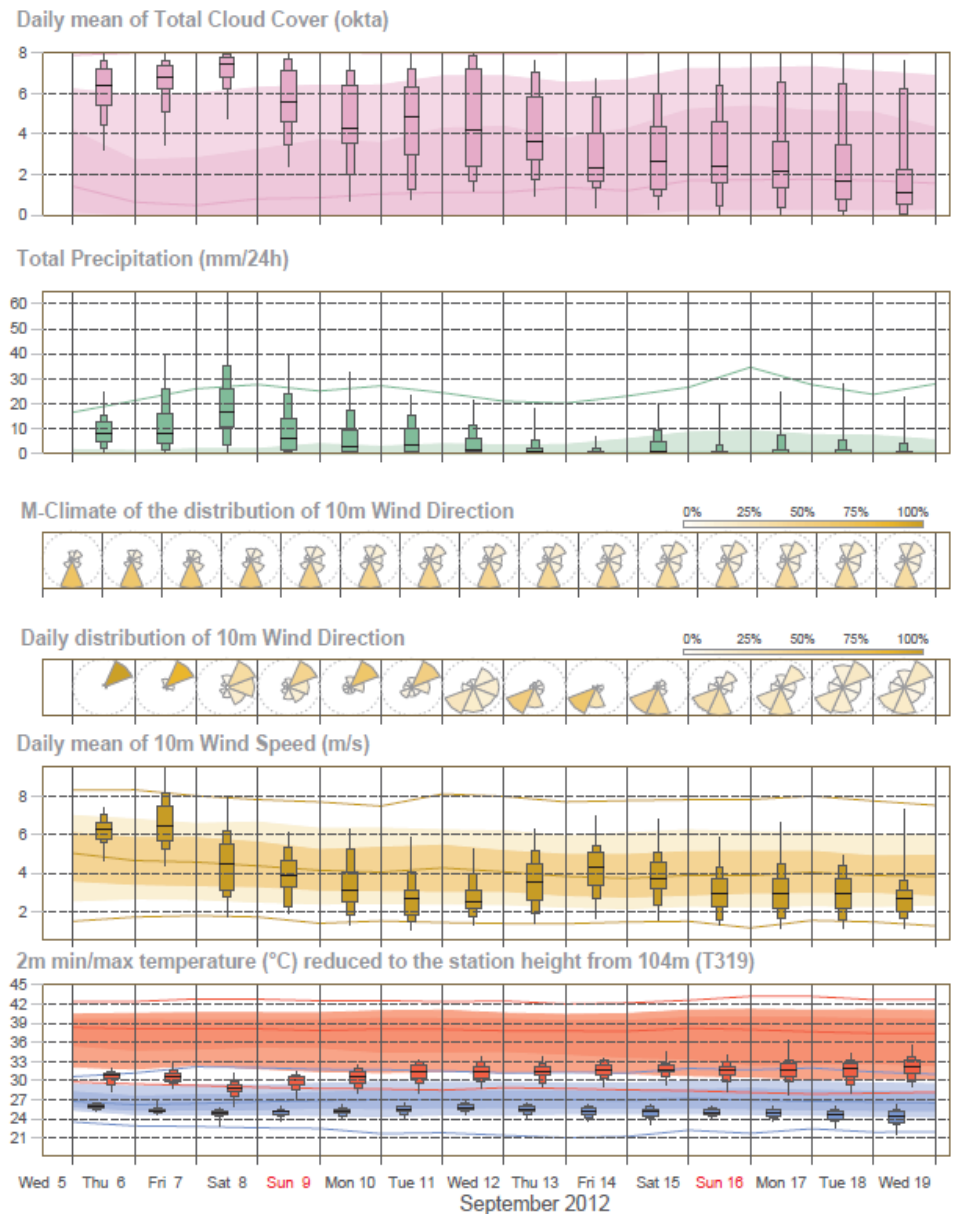
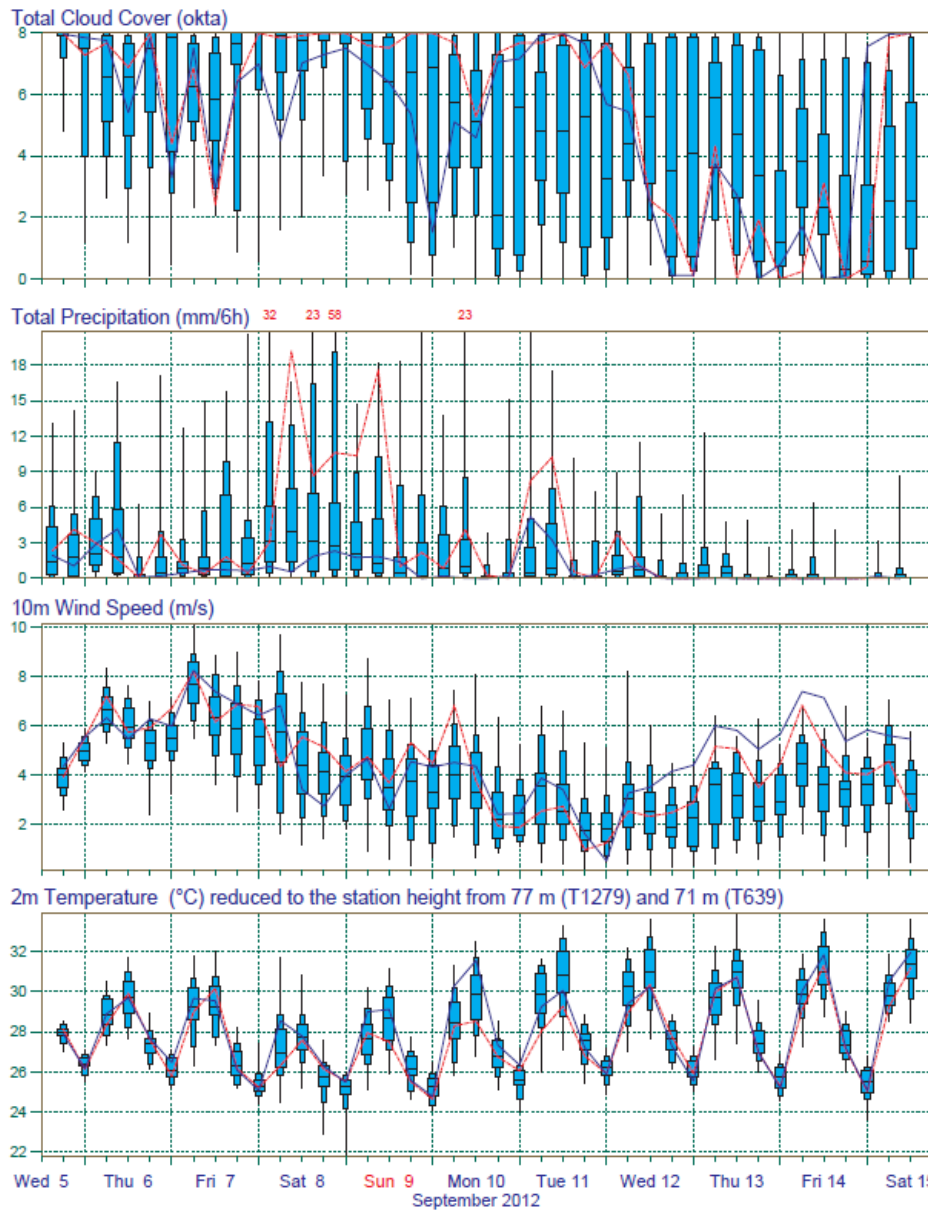
EPS precip probabilities based on 2012-09-06 00:00:00 UTC (exp=1)  
event accumulated from +24h to +72h  
Probability to exceed 100



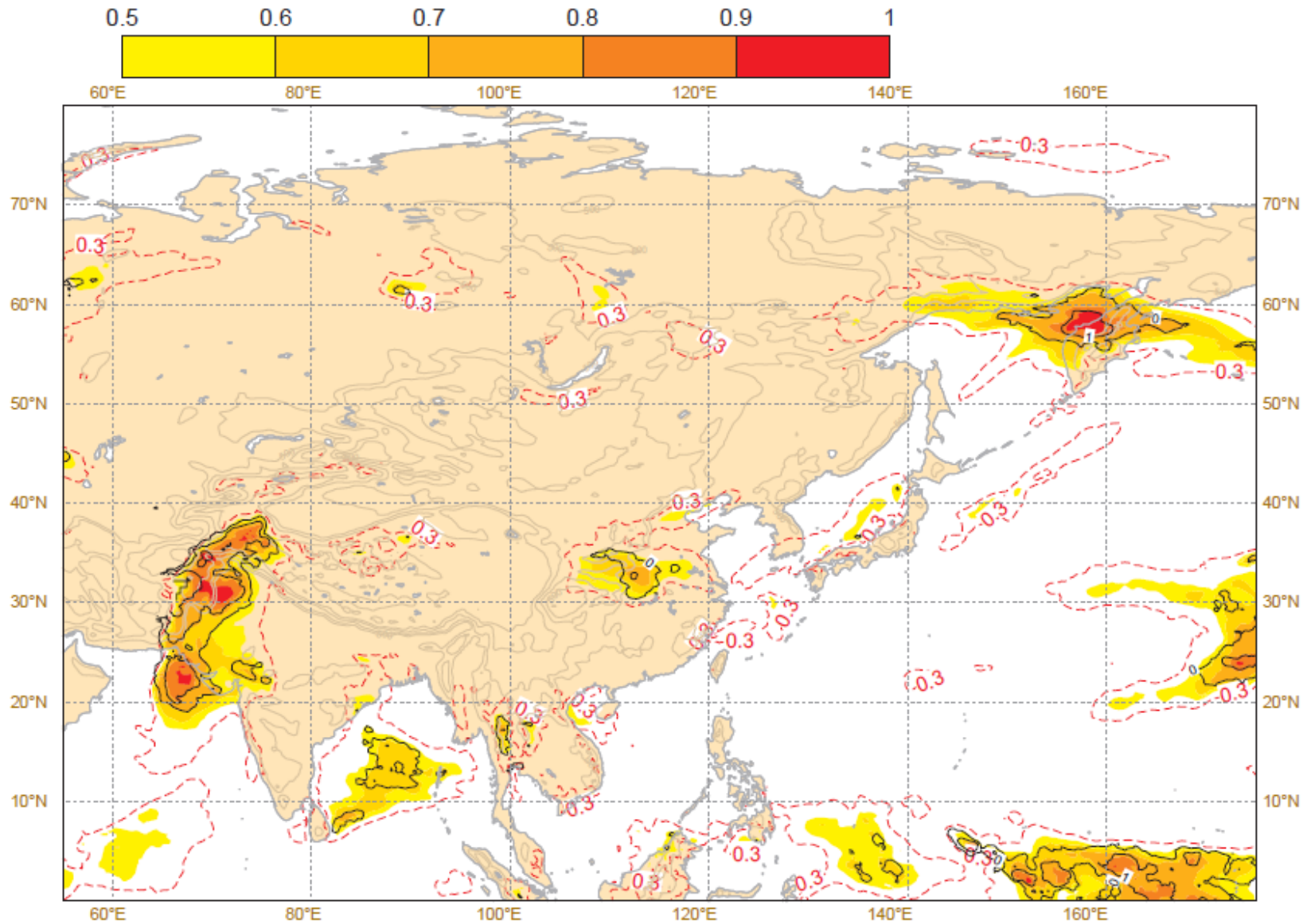
### Faisalabad



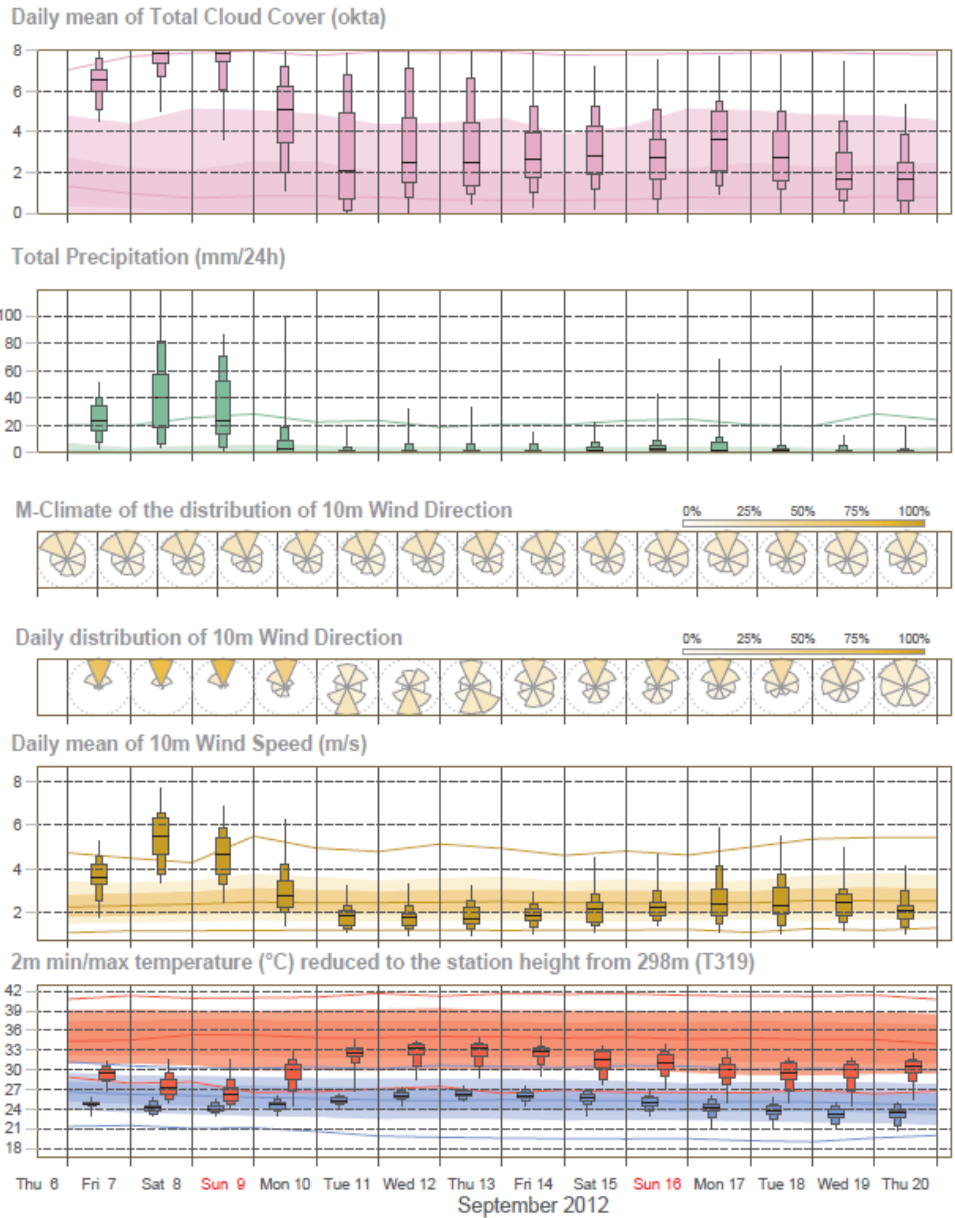
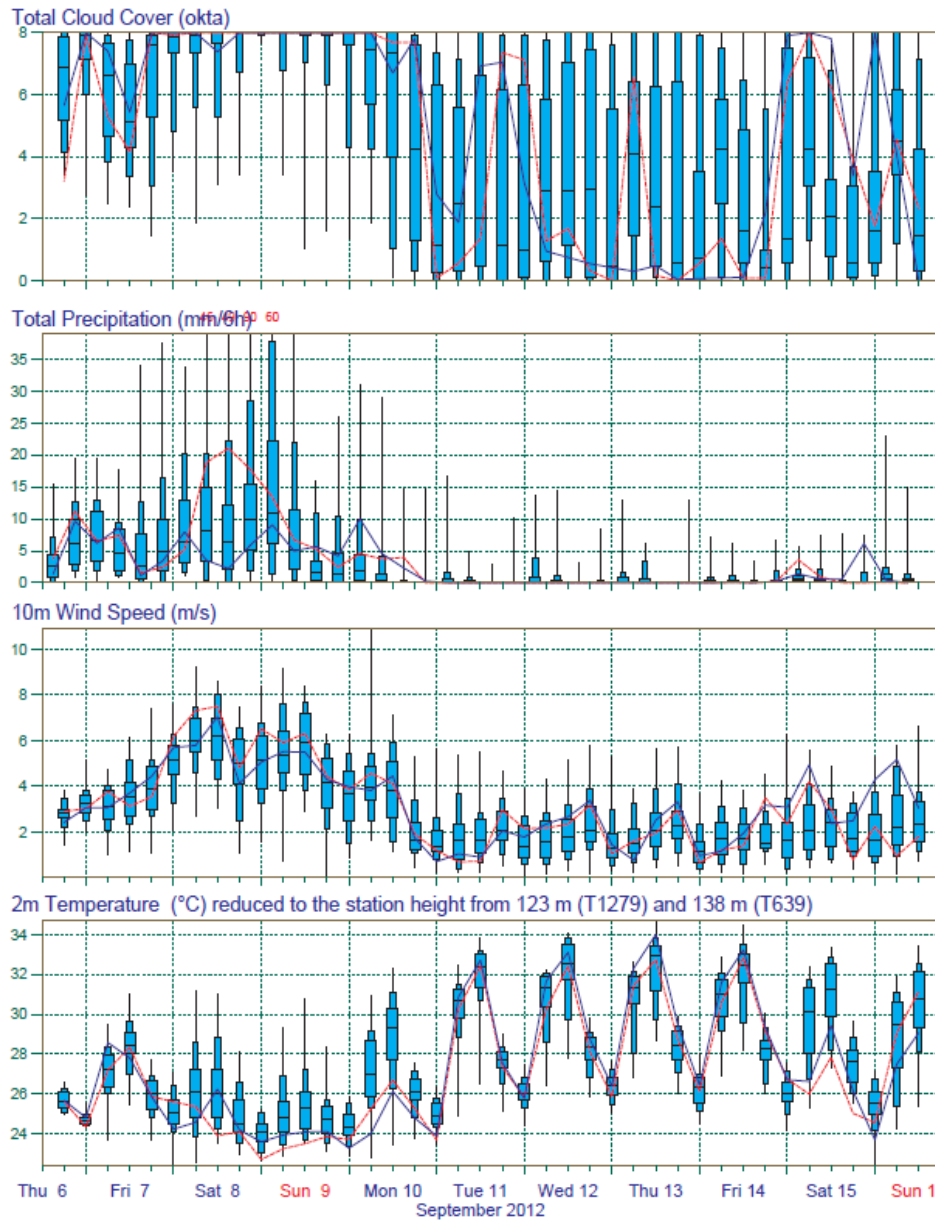
### Rahimyar-Khan



Thu 06 Sep 2012 00UTC ©ECMWF t+0-72h VT: Thu 06 Sep 2012 00UTC - Sun 09 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0,1,5,10,15) for total precipitation

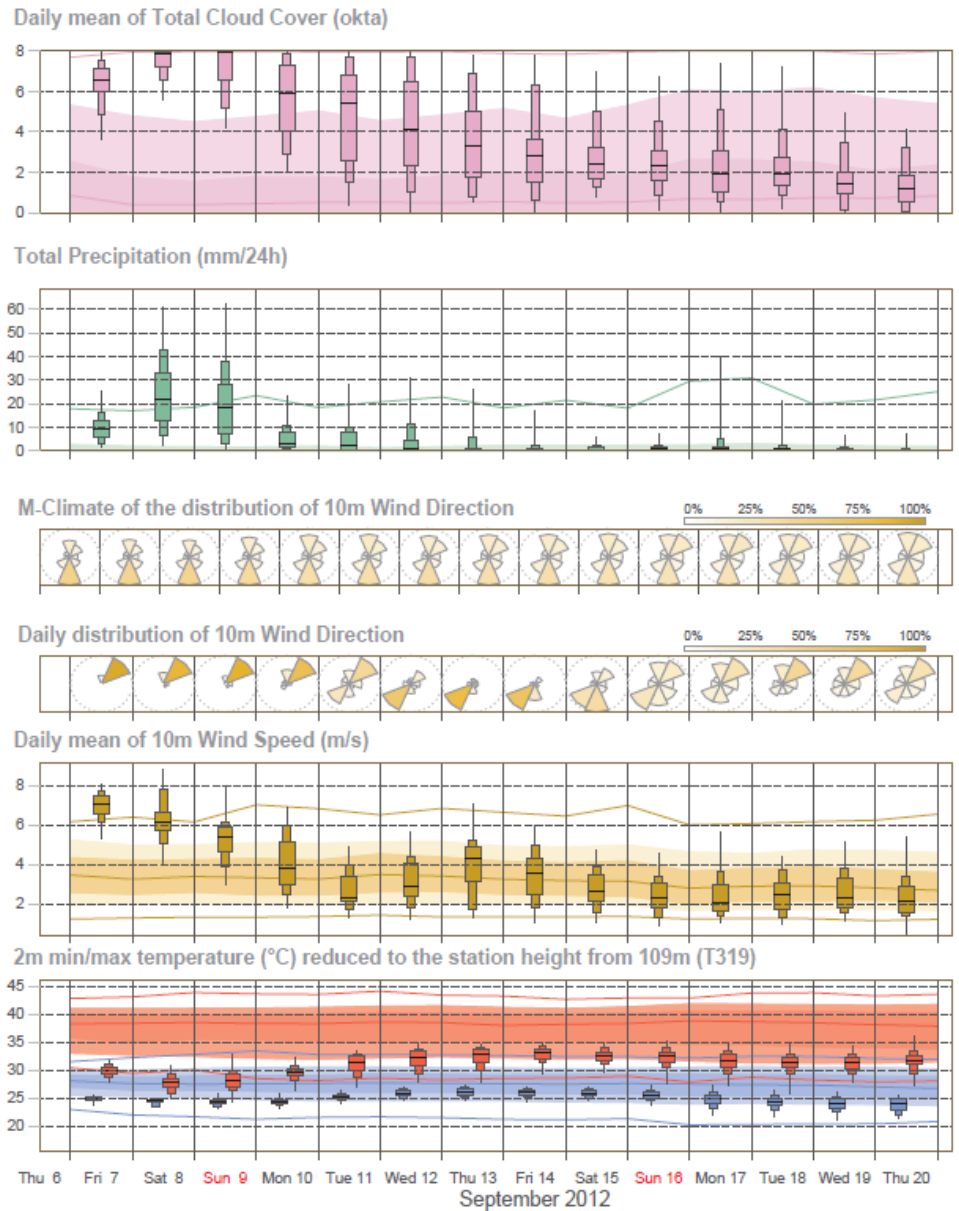
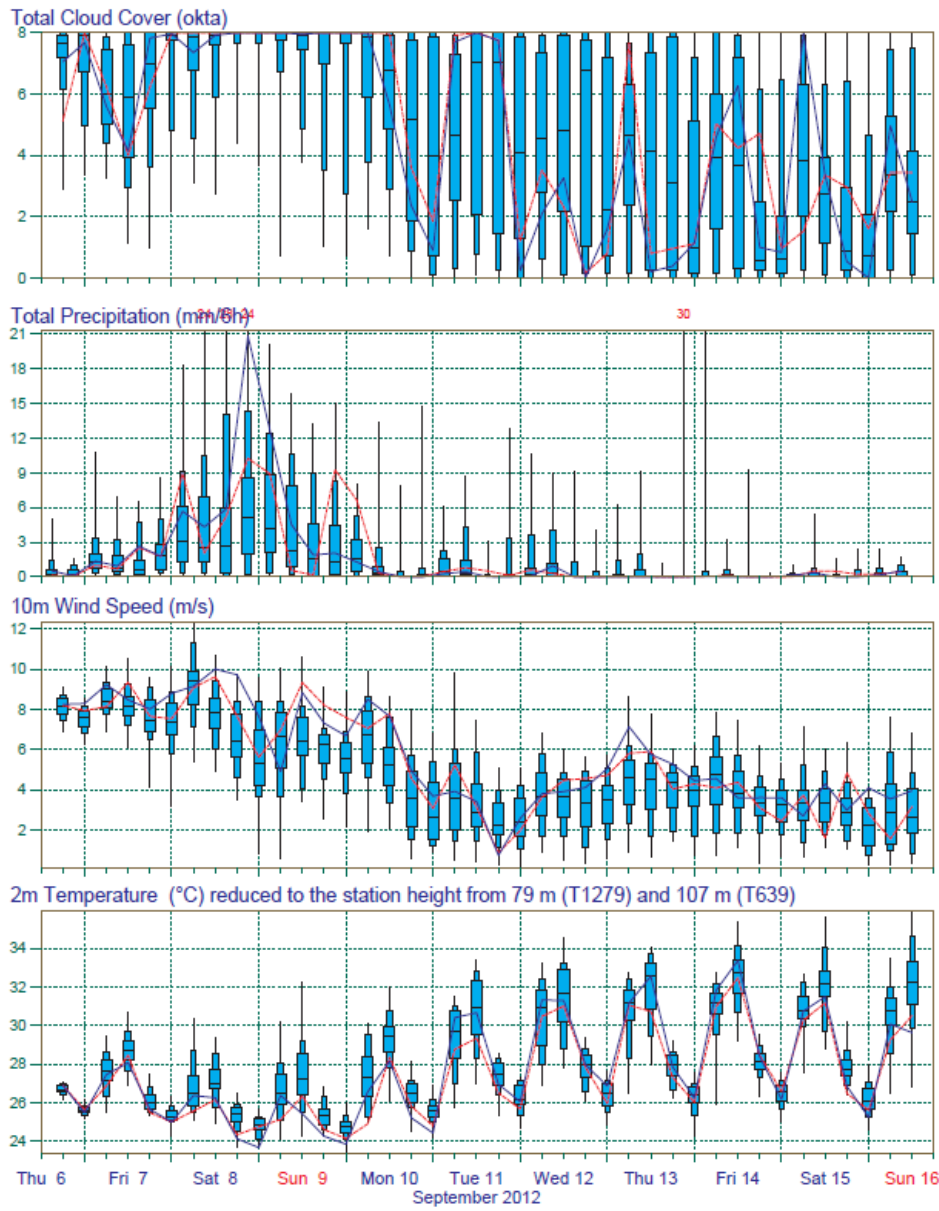


**Faisalabad**





### Rahimyar-Khan



**The Pakistan Meteorological Department is issuing weather advisories (see below)**

**Weather advisory issued today:**

**Dated: 5th Sep, 2012 Time: 1700 PST**

**Weather Advisory-4**

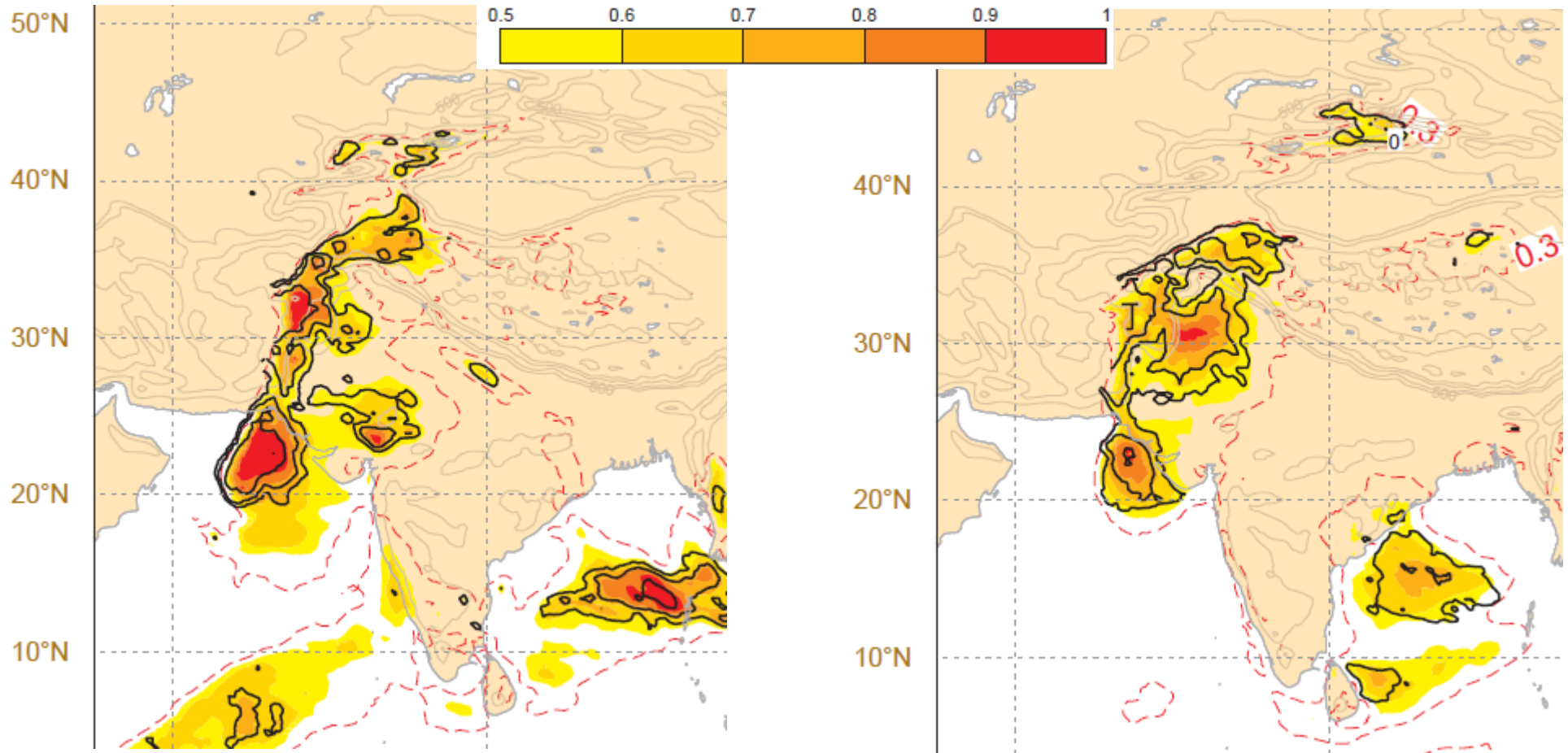
**Widespread Monsoon Rains predicted from Thursday to Saturday**

**Heavy Rains would generate urban & flash floods in the vulnerable areas of the country**

**Yesterday's well marked Low Pressure Area is located over Madhya Pradesh (India) and adjoining areas today. This well marked low is likely to move northwest ward in next 48 hrs (towards Pakistan). Under the influence of this weather system strong monsoon currents would start to penetrate in Pakistan from Thursday, giving Widespread Monsoon rains with scattered heavy downpours in the country from Thursday to Saturday. Heavy downpours would generate urban and flash floods in the vulnerable areas during the period. There is also a probability of Riverine Floods, particularly in Eastern Rivers.**

Fri 07 Sep 2012 00UTC ©ECMWF t+0-24h VT: Fri 07 Sep 2012 00UTC - Sat 08 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0, 1, 5, 10, 15) for total precipitation

Fri 07 Sep 2012 00UTC ©ECMWF t+24-48h VT: Sat 08 Sep 2012 00UTC - Sun 09 Sep 2012 00UTC  
Extreme forecast index and Shift of Tails (black contours 0, 1, 5, 10, 15) for total precipitation



Update of the weather advisory issued by Pakistan Met Office

Dated: 7th Sep, 2012 Time: 1700 PST

### **Weather Advisory-6**

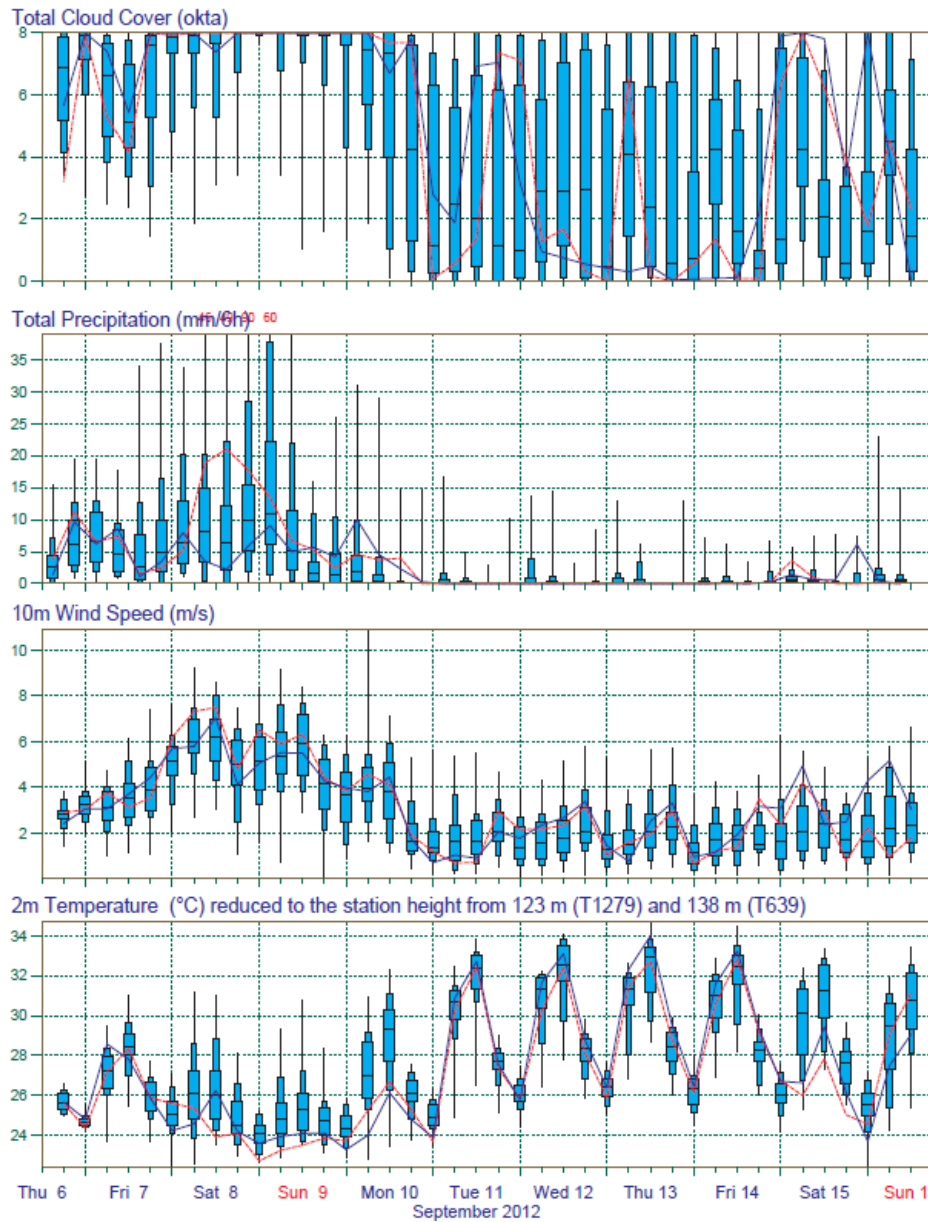
#### **Widespread Monsoon Rains predicted on Saturday/Sunday**

**Heavy Rains would generate urban & flash floods in the vulnerable areas of the country**

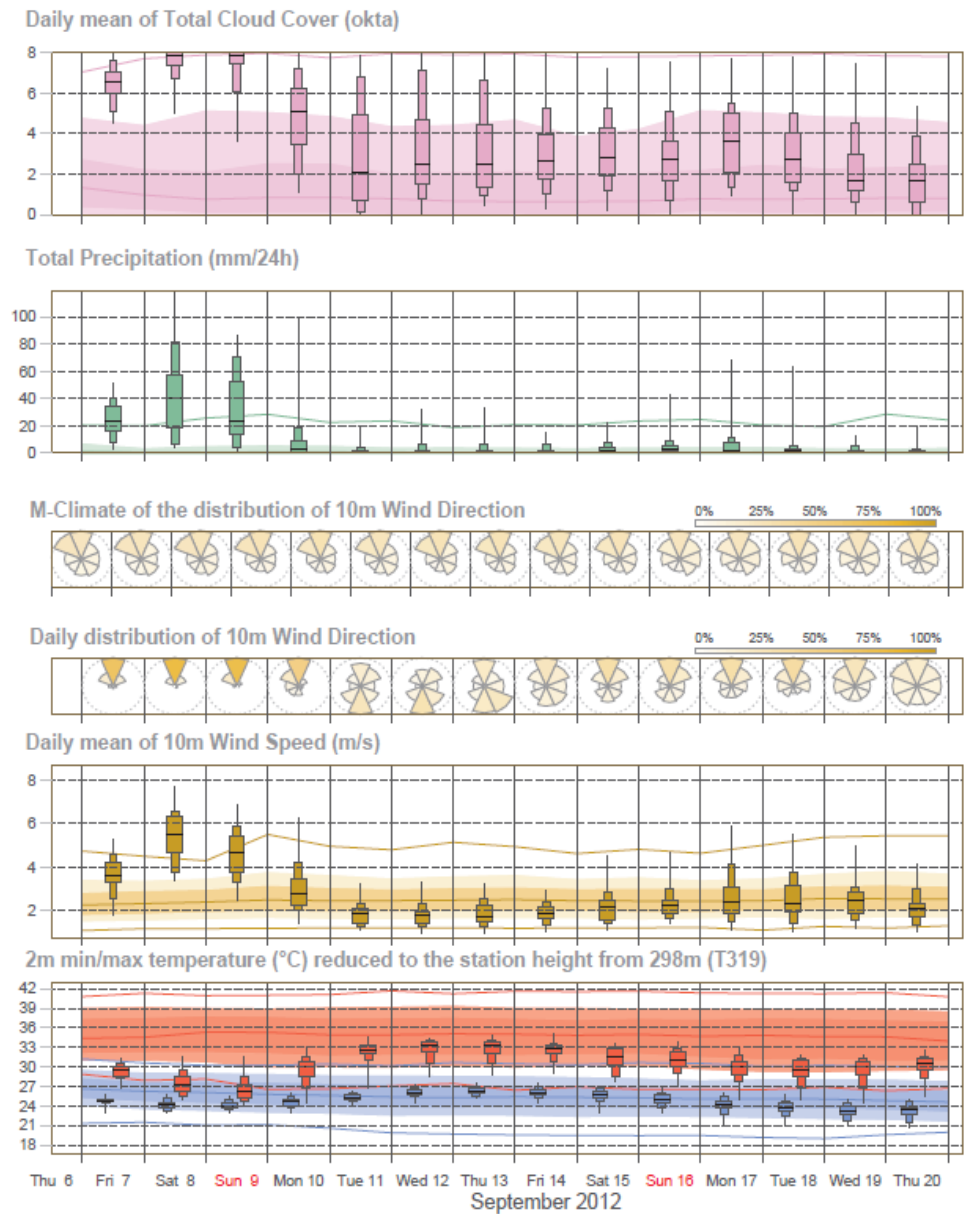
**Yesterday's well-marked Low Pressure Area has entered in eastern parts of Rajasthan (India) and adjoining areas today. This well marked low is likely to move further northwestward in next 24 hrs and likely to enter in southeast Punjab and adjoining areas of upper Sindh on Sunday. Under the influence of this weather system, strong monsoon currents would penetrate in central parts of Pakistan on Saturday/Sunday, producing widespread Monsoon Rains over there. A westerly wave is located over Afghanistan and its trough is extended up to western parts of Pakistan. Heavy rains would generate flash floods in the vulnerable areas of Southern Punjab, Upper Sindh, Lower KP and Northeast Balochistan during the period.**

EPS Meteogram  
 31.05°N 70.72°E (EPS land point) 123 m (T1279)  
 Deterministic Forecast and EPS Distribution Thursday 6 September 2012 12 UTC

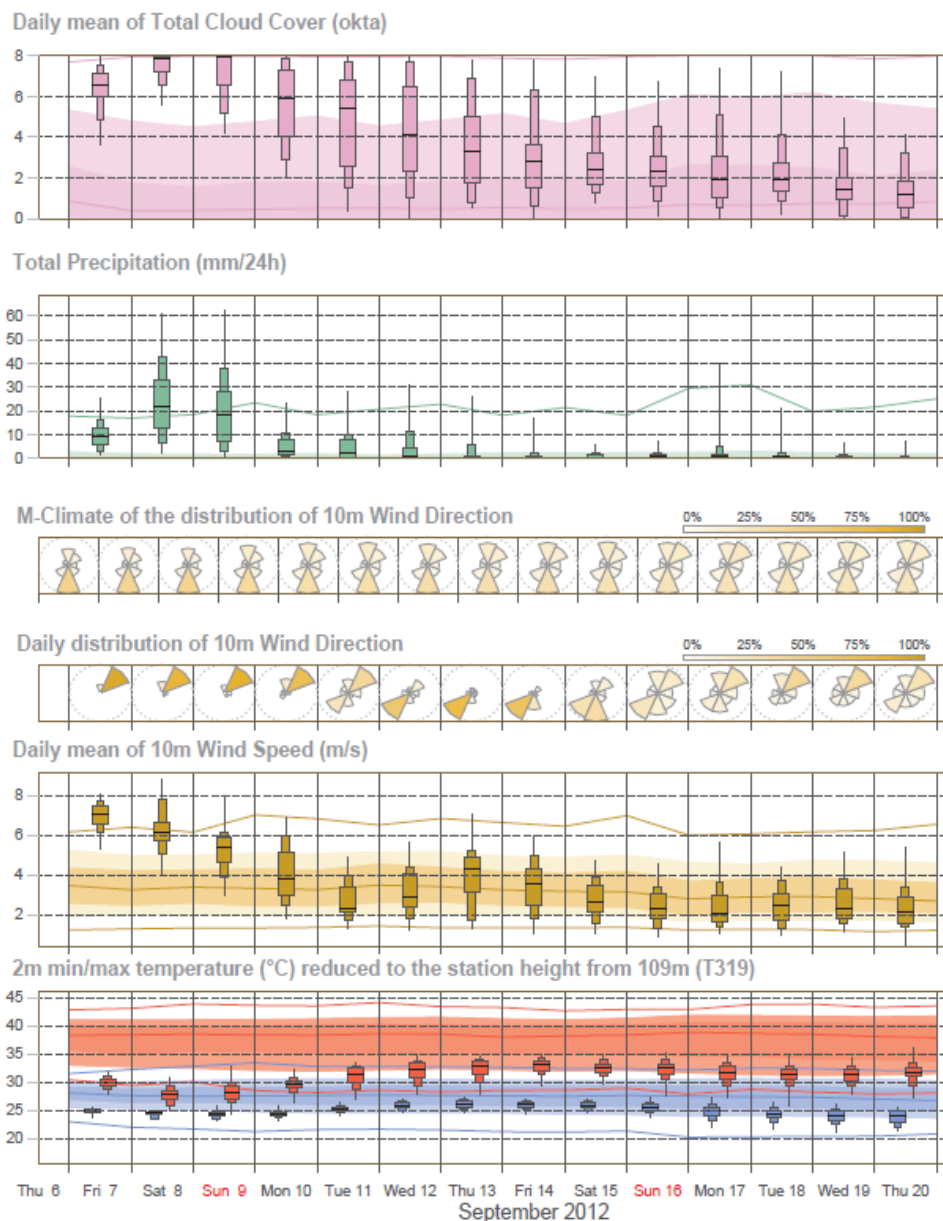
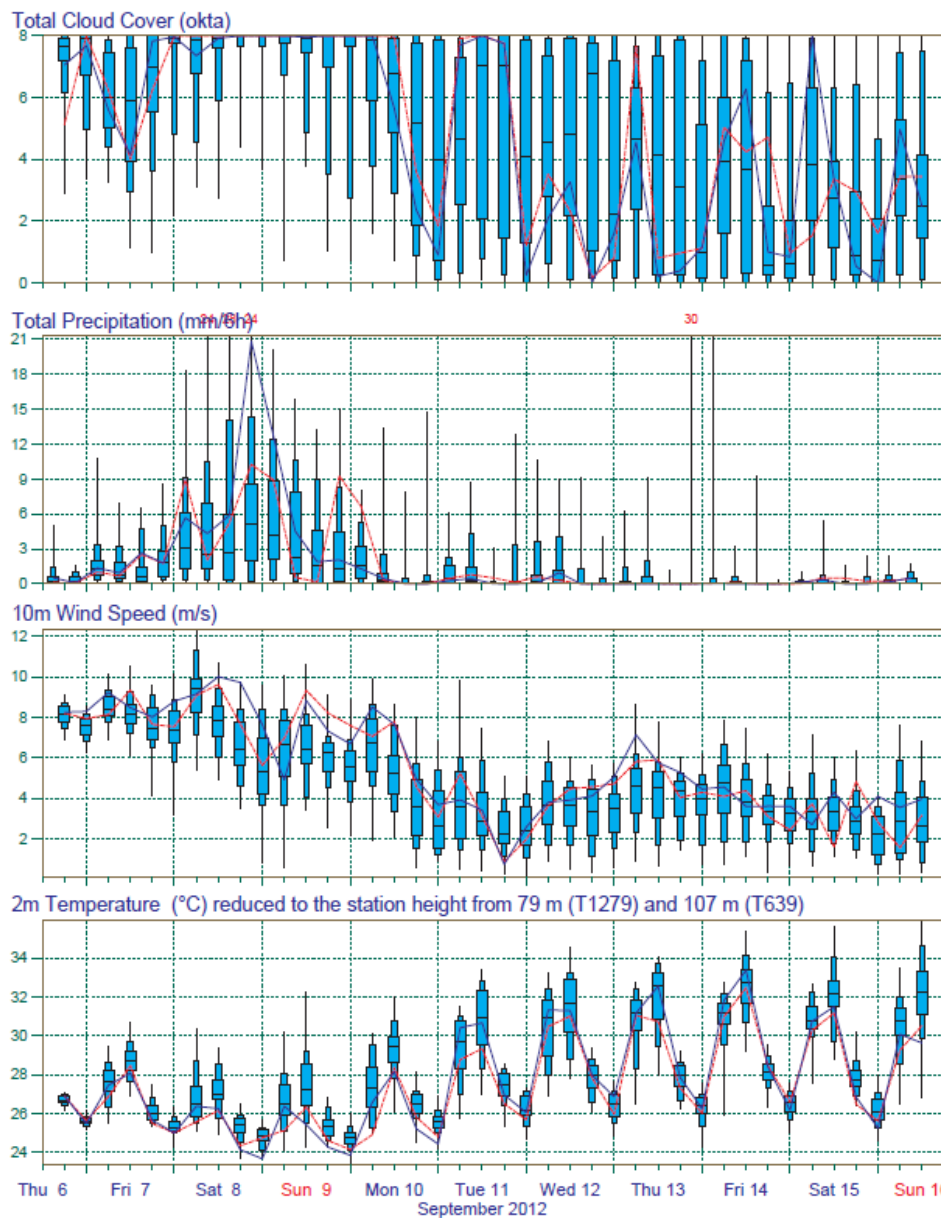
### Faisalabad



EPS Meteogram  
 31.17°N 70.63°E (EPS land point) 173 m (T639)  
 Extended Range Forecast based on EPS Distribution Thursday 6 September 2012 12 UTC

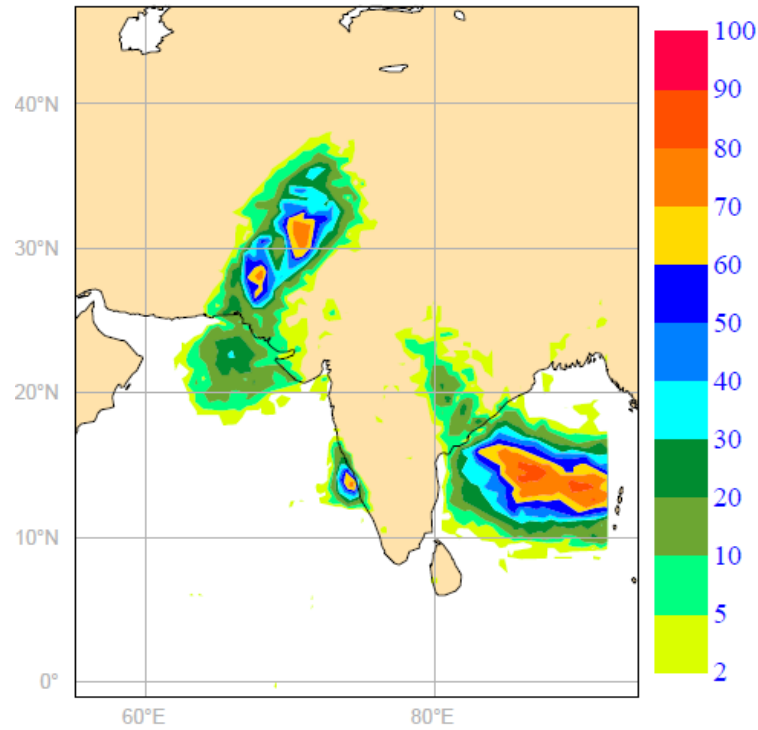


### Rahimyar-Khan

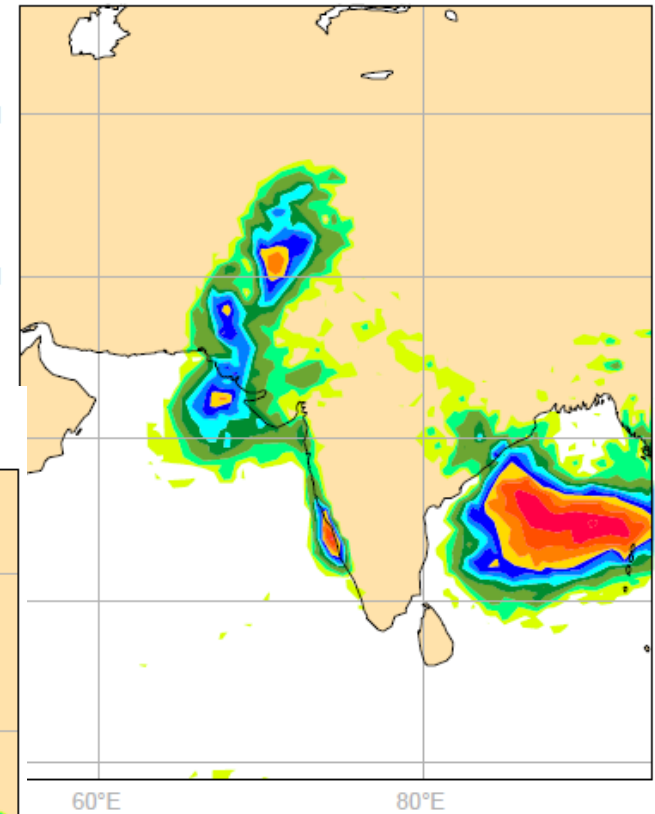
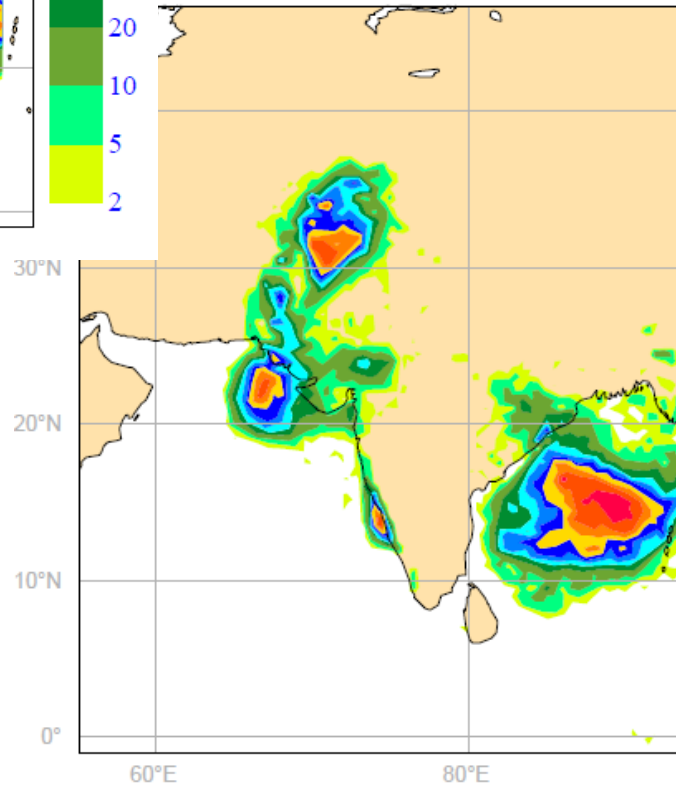


EPS precip probabilities based on 2012-09-04 00:00:00 UTC (exp=1)  
event accumulated from +72h to +120h  
Probability to exceed 50

EPS precip probabilities based on 2012-09-05 00:00:00 UTC (exp=1)  
event accumulated from +48h to +96h  
Probability to exceed 50



precip probabilities based on 2012-09-06 00:00:00 UTC (exp=1)  
event accumulated from +24h to +72h  
Probability to exceed 50



**Probabilities of precip >  
50 mm/48 hours**

Today, the National Meteorological Service of Pakistan has posted the amount of precipitation accumulated over 24h (ending this morning) for a few stations. I have picked three locations:

- Jaccoabad 305mm/24h
- Sukkur 164mm/24h
- Rohri 152mm/24h



These three locations are within the red box in the following plot:

The forecast for the severe weather (precipitation above the 90 percentile) has been generally quite successful.

