

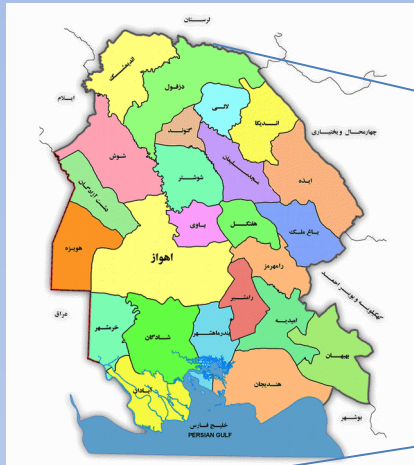
**ISLAMIC REPUBLIC OF IRAN
METEOROLOGICAL ORGANIZATION**



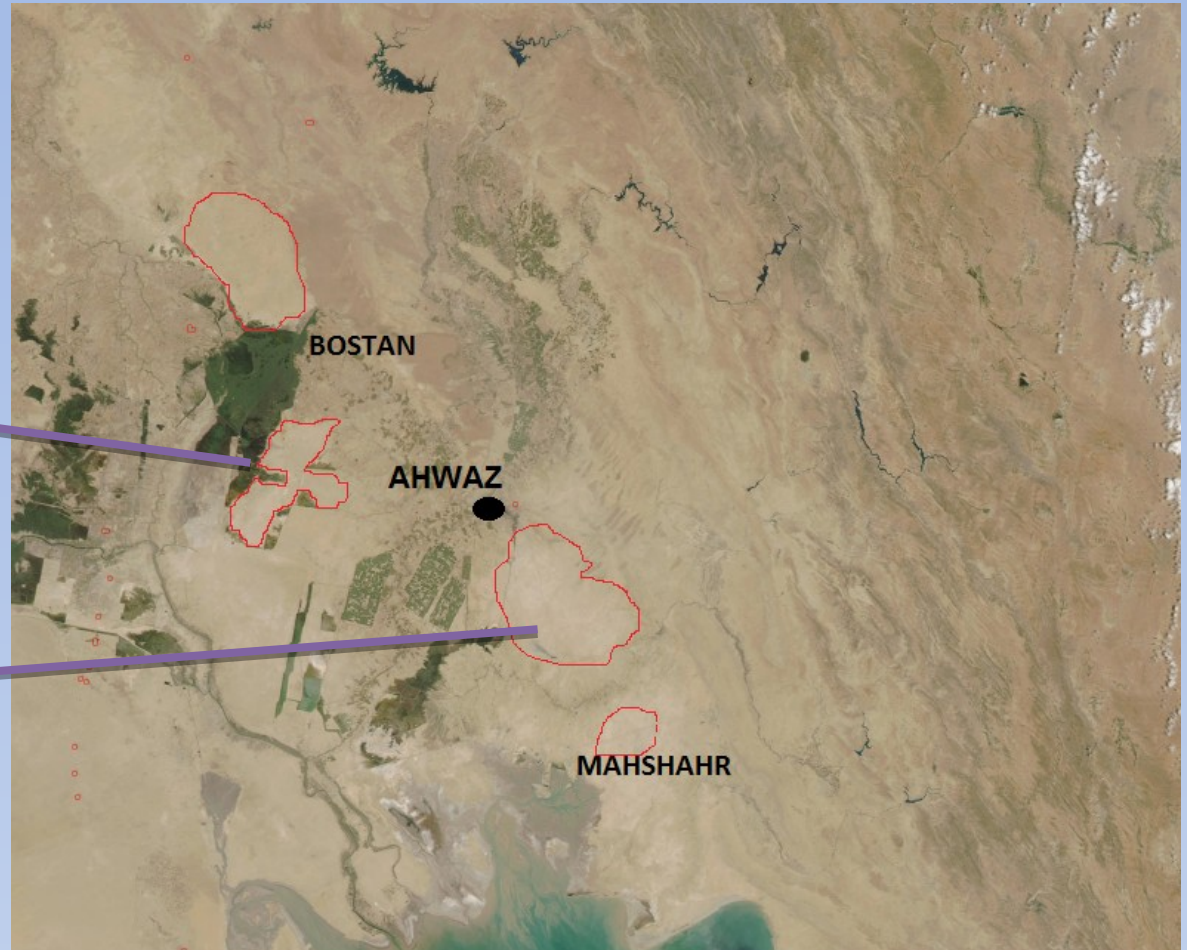
**LOCAL DUST STORM
in khuzestan province**
)Case Study: 1 to 2 November, 2016(

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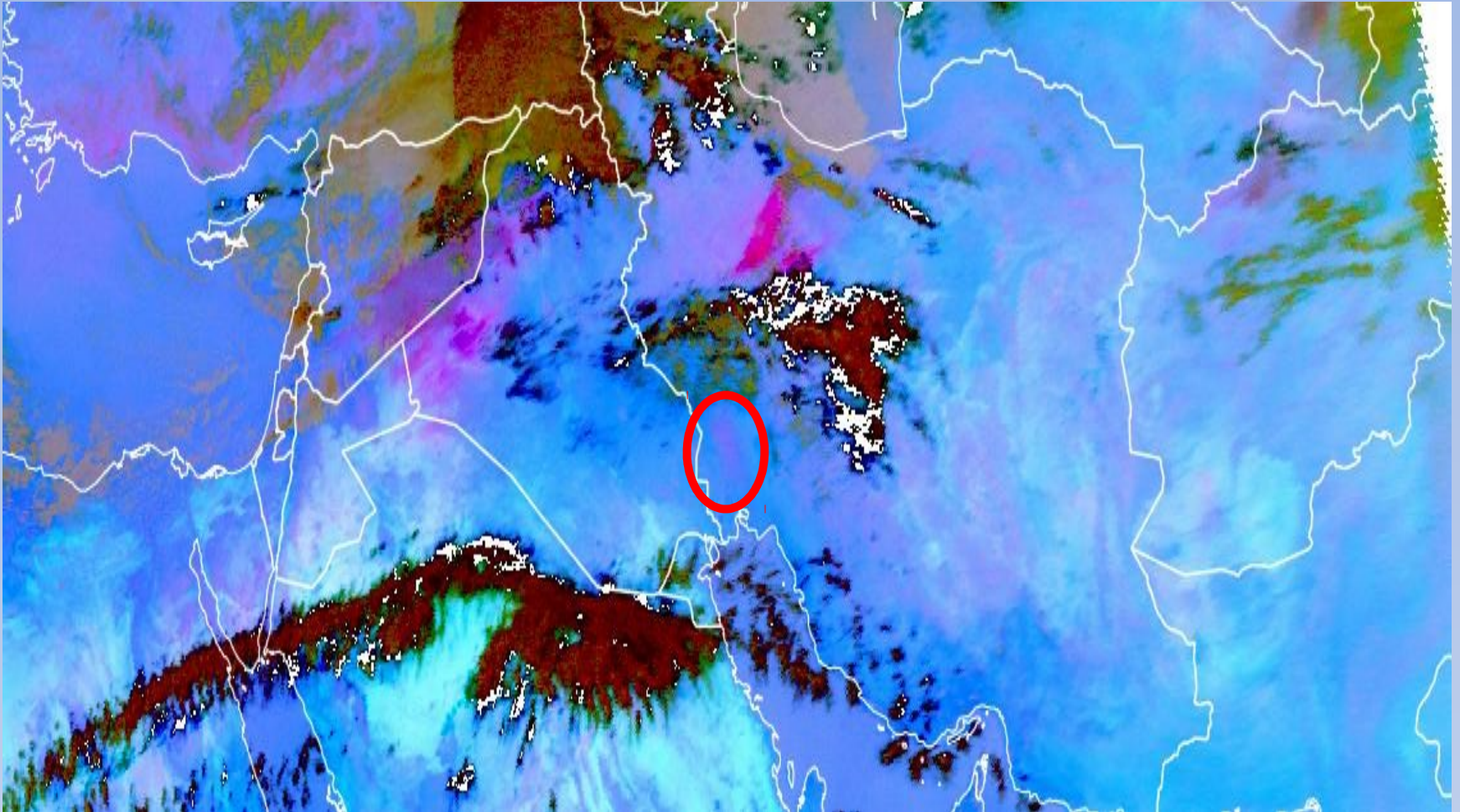
Geographical location



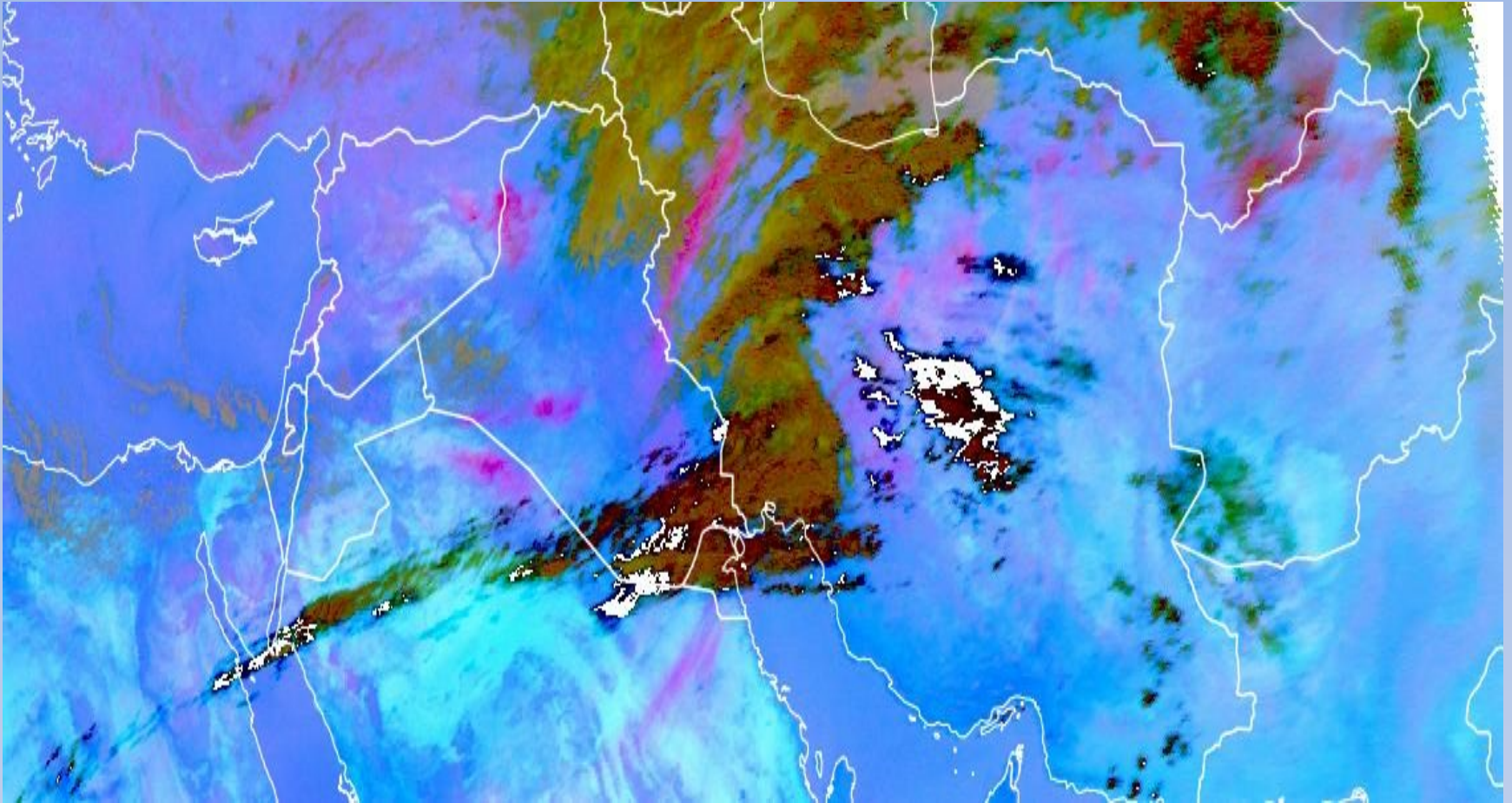
Dust sources in Khuzestan province



Satellite image on November 1, 2016



Satellite image on November 2, 2016



Visibility and wind direction and speed for AHWAZ

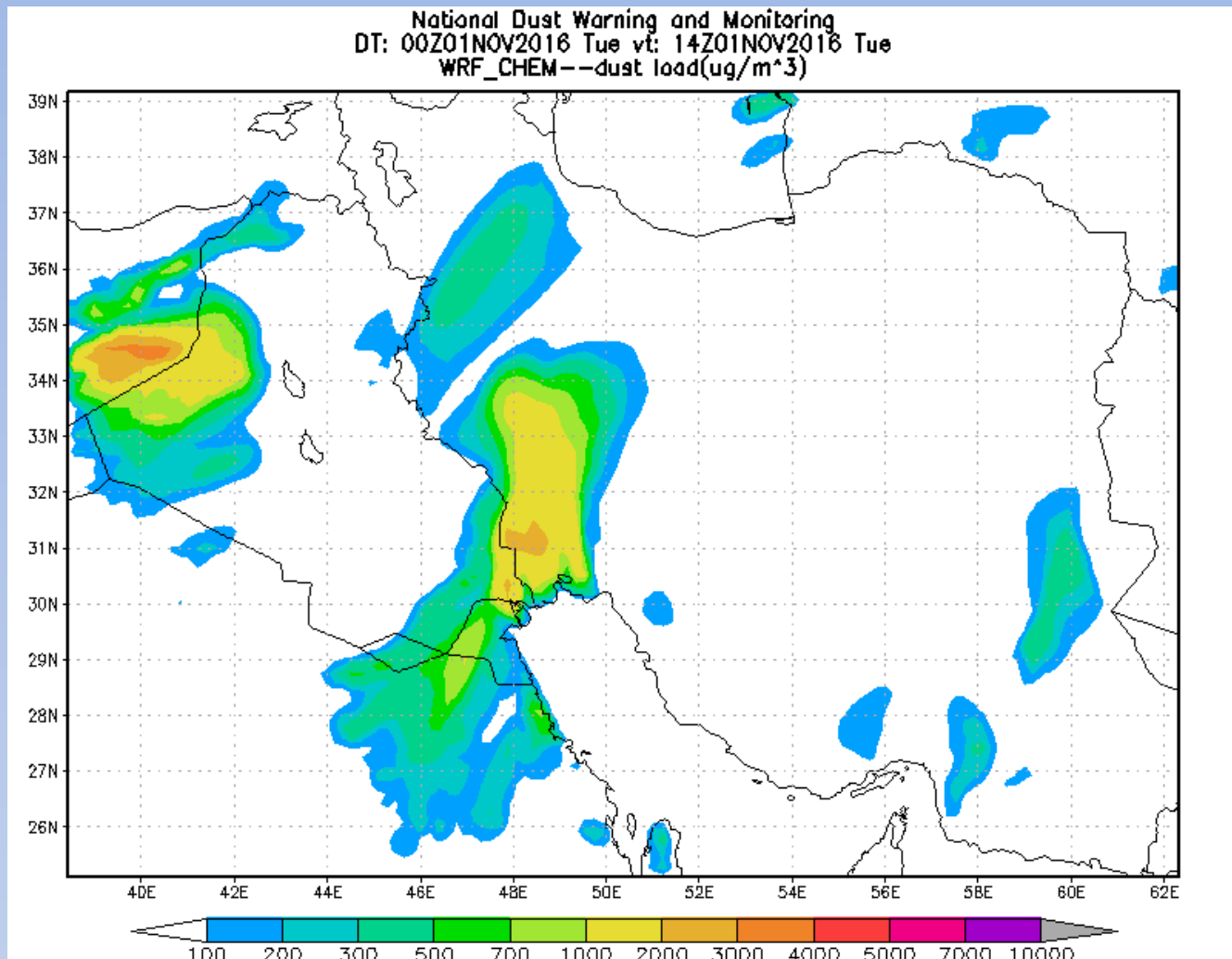
November 1, 2016

visibility	wind speed	Wind direction	Hours of occurrence)utc(
m 6000	kt 12	160	07
m 1500	kt 12	160	08
m 1100	kt 12	160	09
m 1200	kt 12	170	10
m 1300	kt 14	160	11
m 1300	kt 12	170	12
m 2000	kt 10	170	13

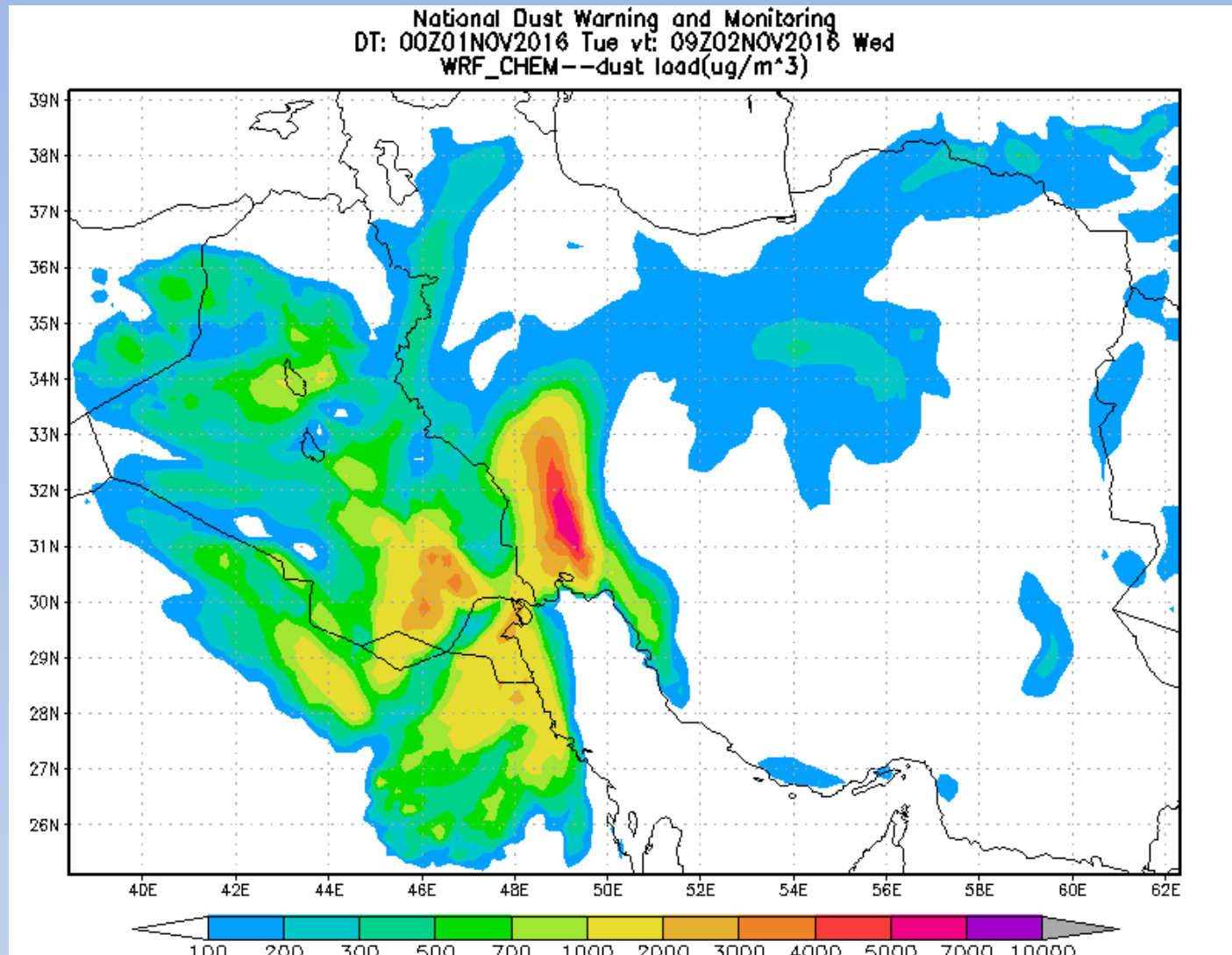
November 2, 2016

visibility	wind speed	Wind direction	Hours of occurrence)utc(
m 1800	kt 23	160	06
m 1500	kt 27	160	07
m 500	kt 25	170	08
m 500	27kt	170	09
m 600	kt 23	170	10
m 1000	kt 16	190	11
m 3000	kt 10	200	12

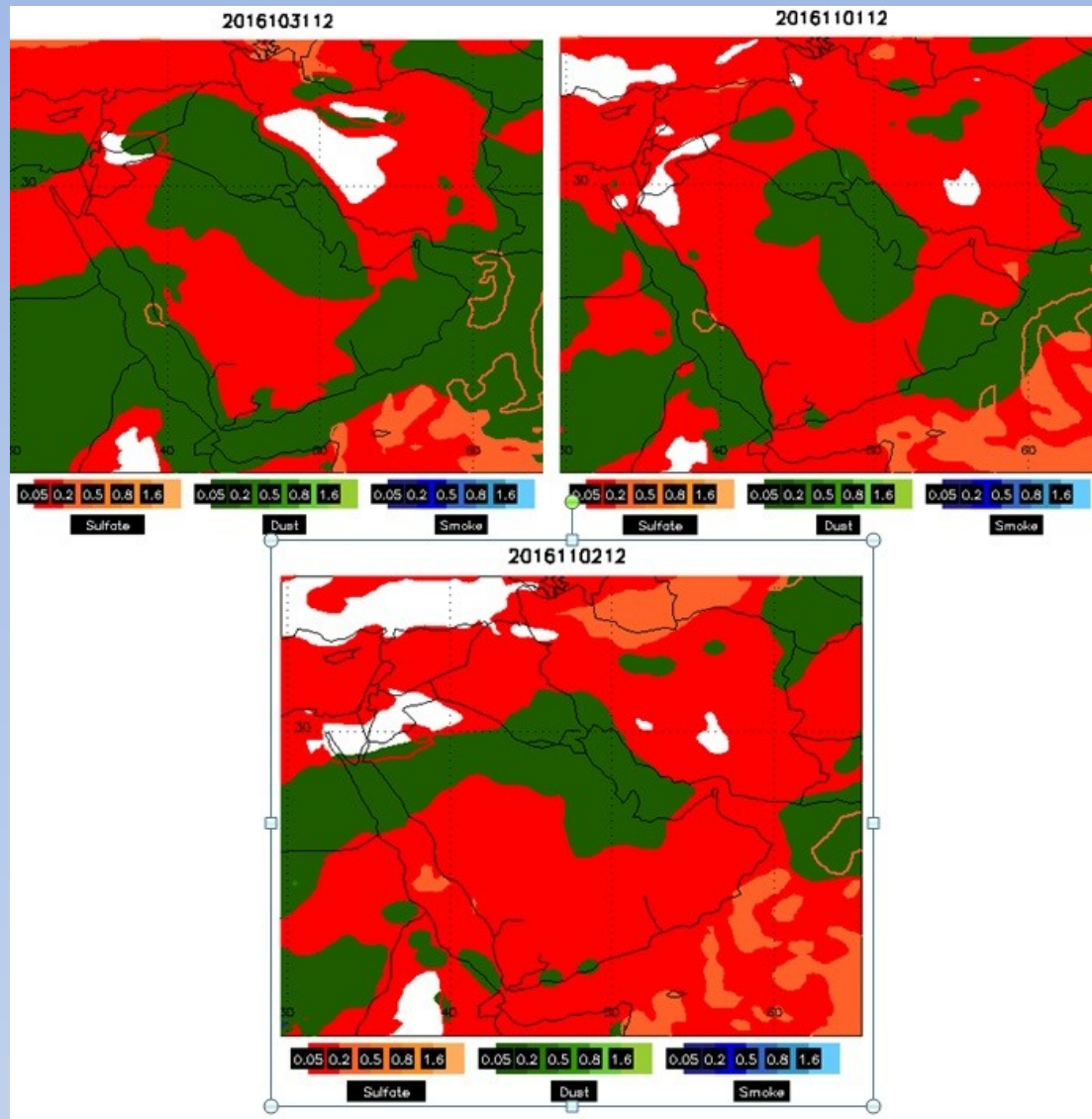
WRF_CHEM on November 1, 2016



WRF_CHEM on November 2, 2016



AOD prediction with NAAPS model



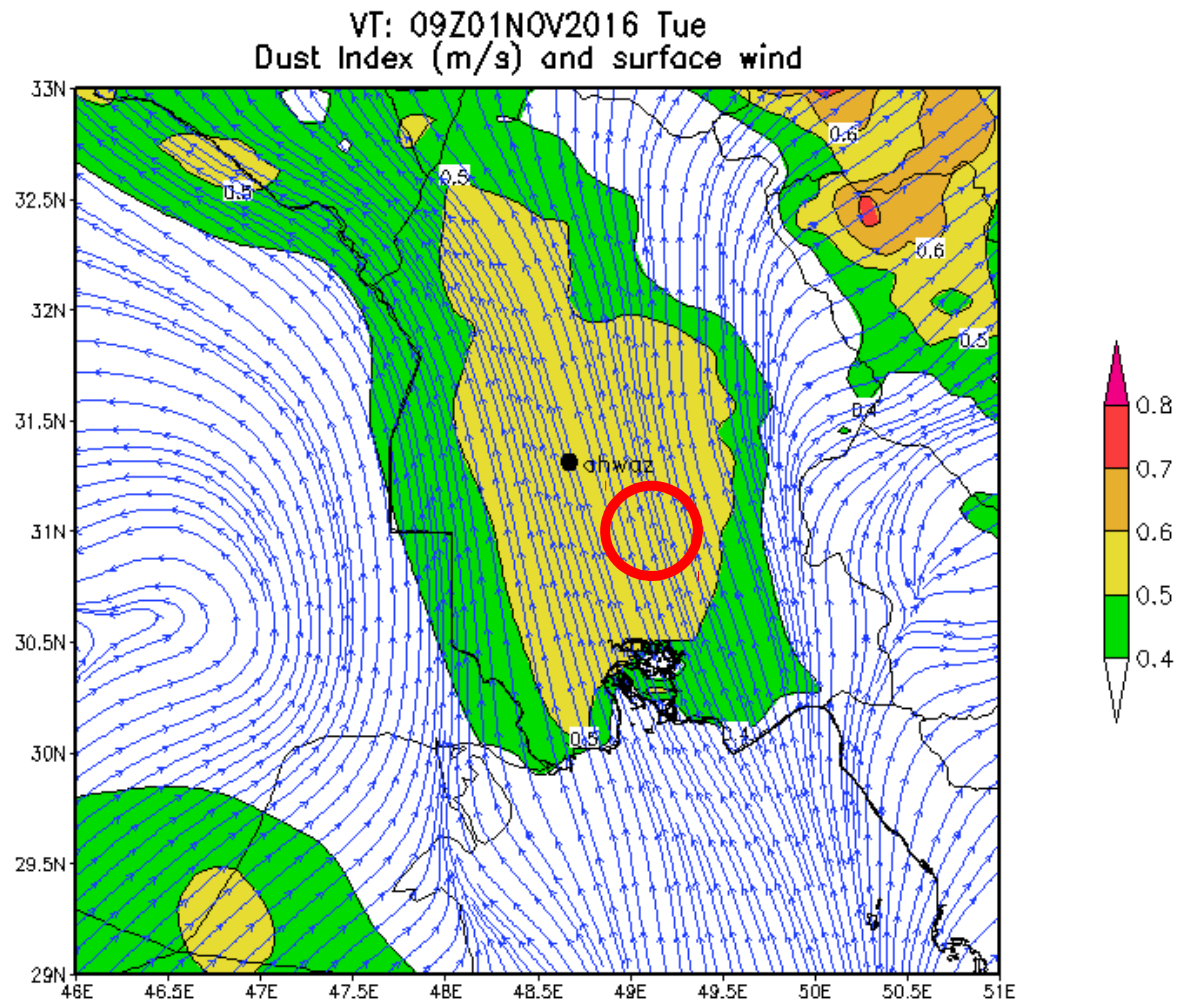
FRICTION VELOCITY

Whether individual soil particles can break away from the surface depends on the joint forces of the external aerodynamics and resistance (including gravity and internal viscous force). In blown sand physics, u^* , the friction velocity, is used to reflect the aerodynamic force imposed on sand particles.

According to existing observations and experimental results, sand-dust particles will break away from the surface and enter the atmosphere as soon as u^* exceeds a certain threshold (critical friction velocity)

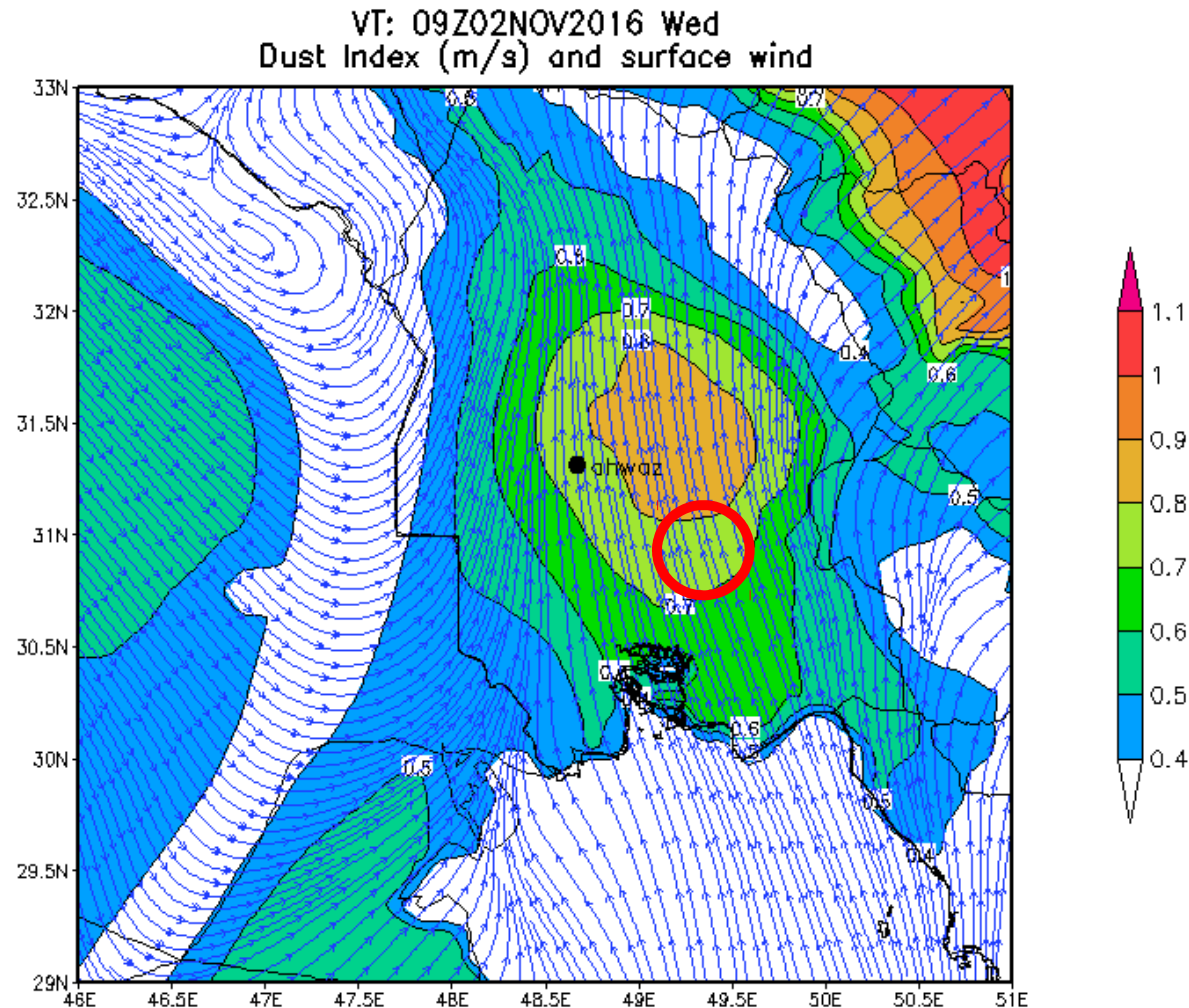
Friction Velocity on November 1, 2016

$FV > 0.5$ (in source region)



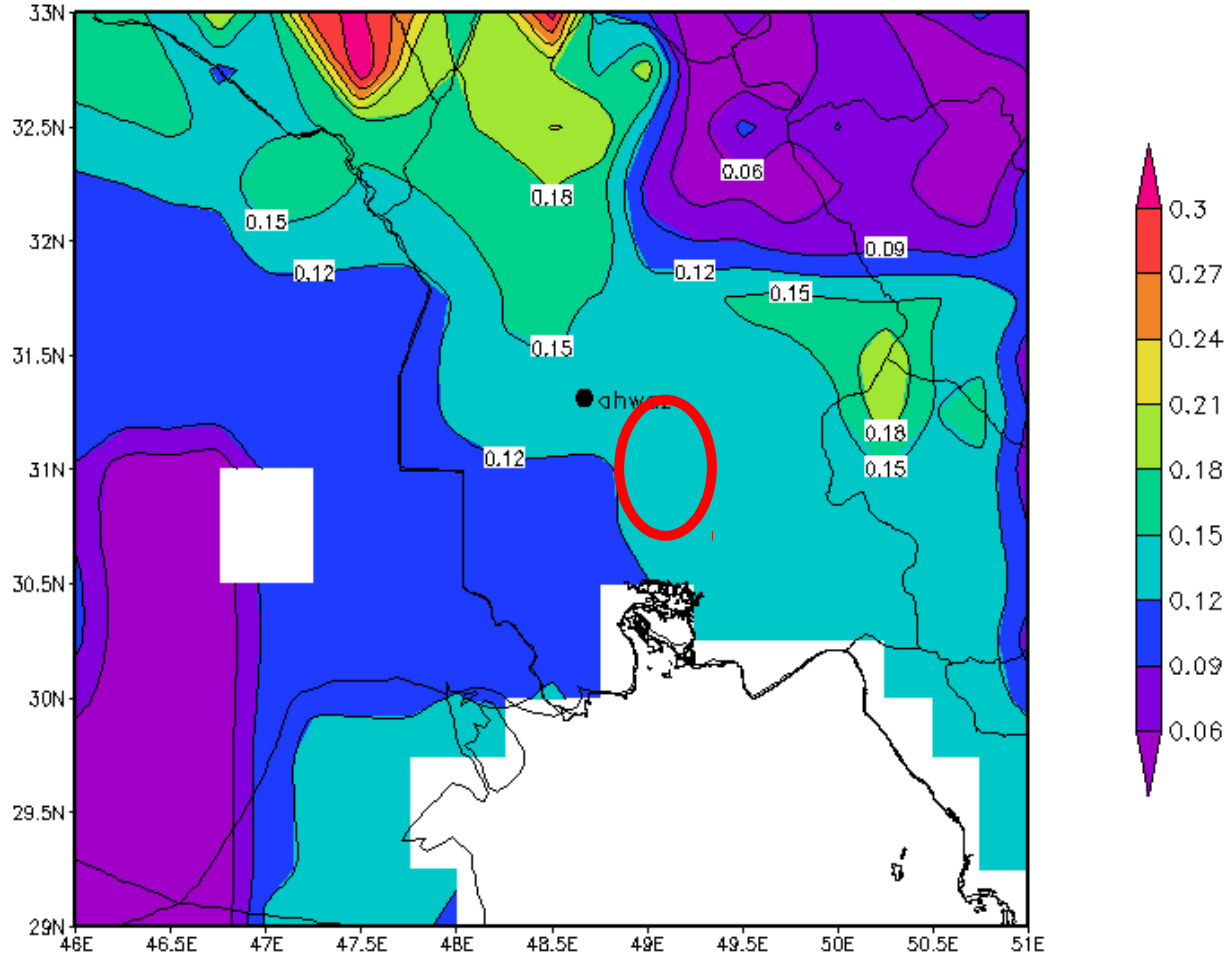
Friction Velocity on November 2, 2016

FV>0.7(in source region)

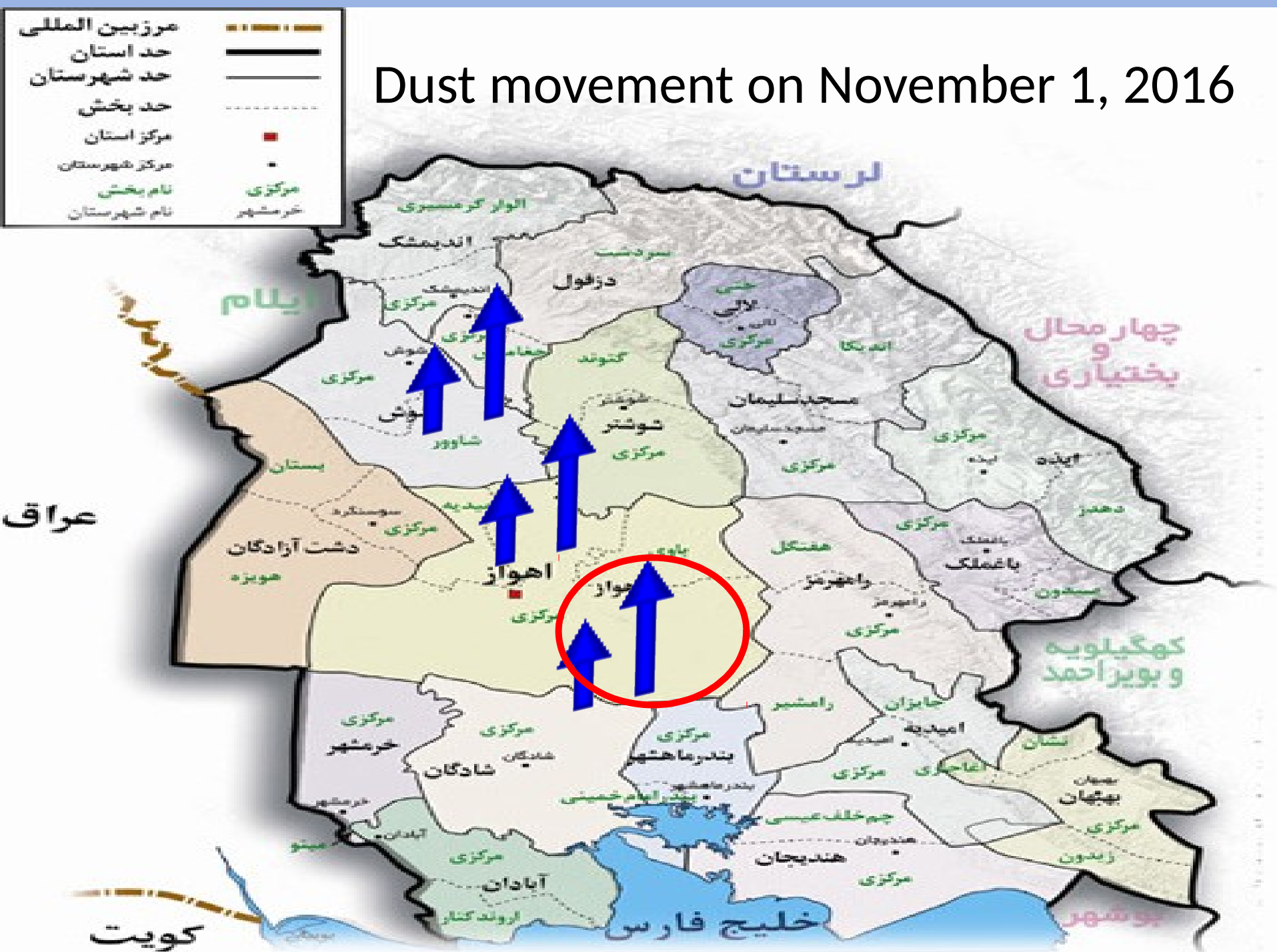


Volumetric soil moisture[fraction]

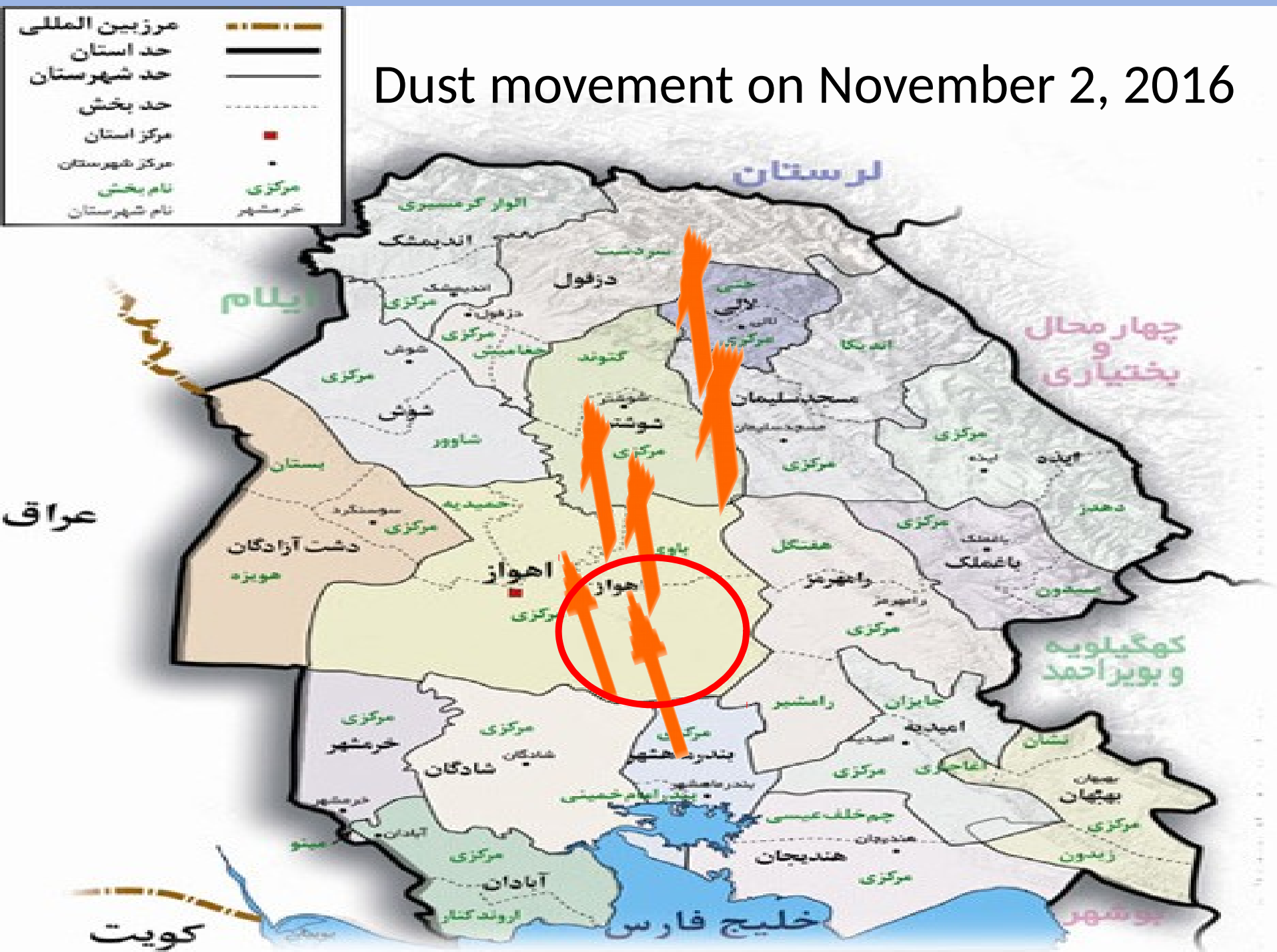
DT: 00Z02NOV2016 Wed VT: 09Z02NOV2016 Wed
0-0.1 m below ground volumetric soil moisture content [fraction]



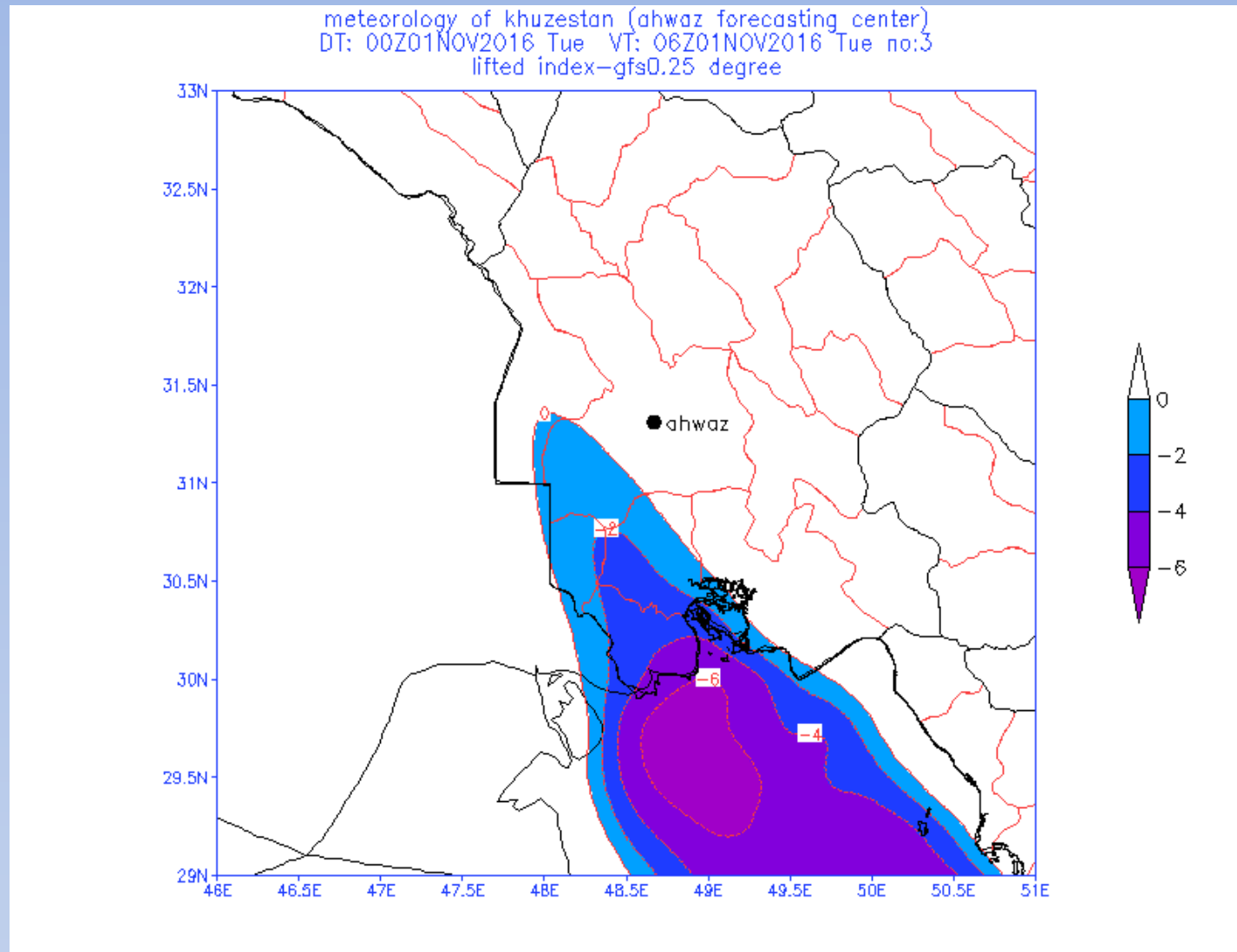
Dust movement on November 1, 2016



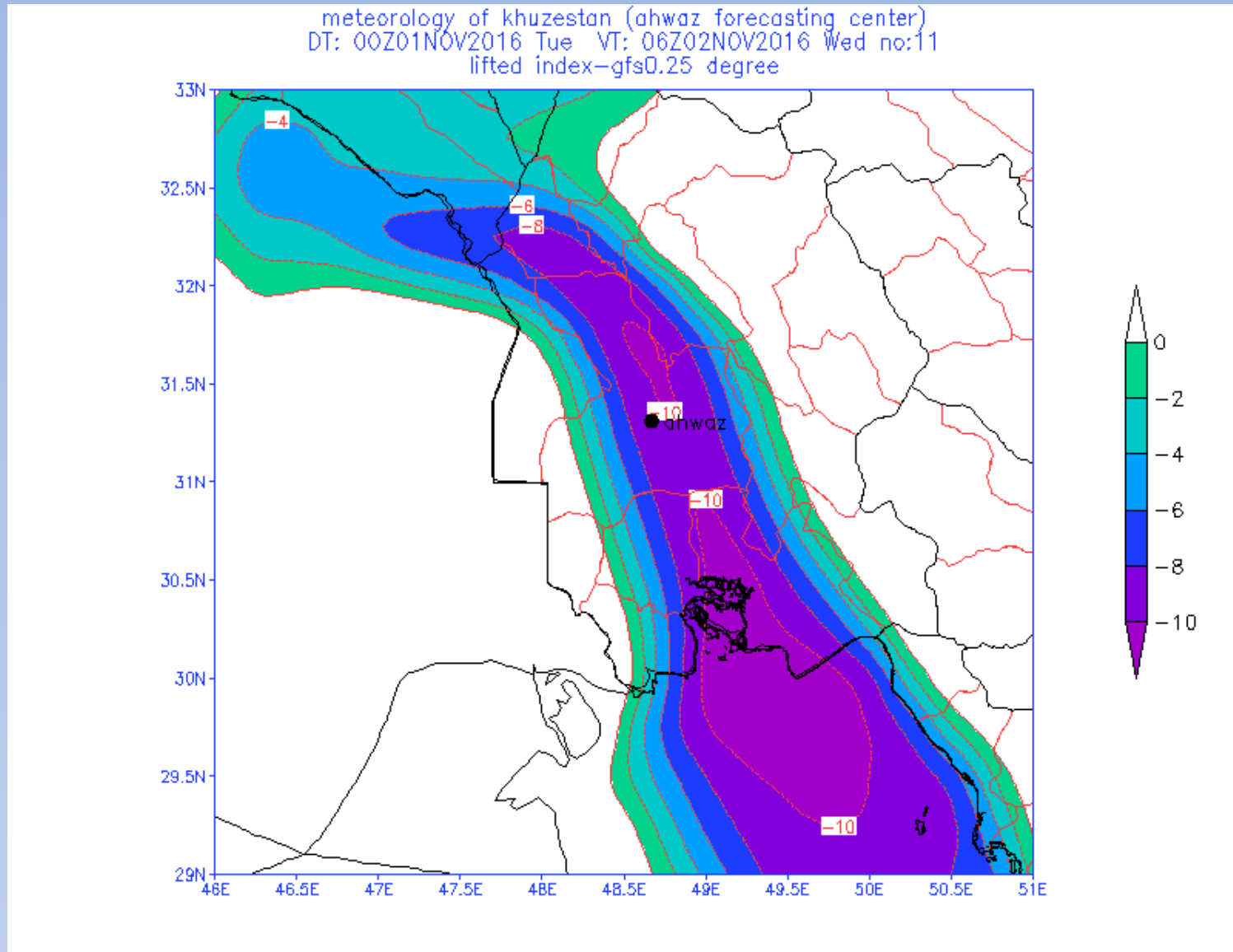
Dust movement on November 2, 2016



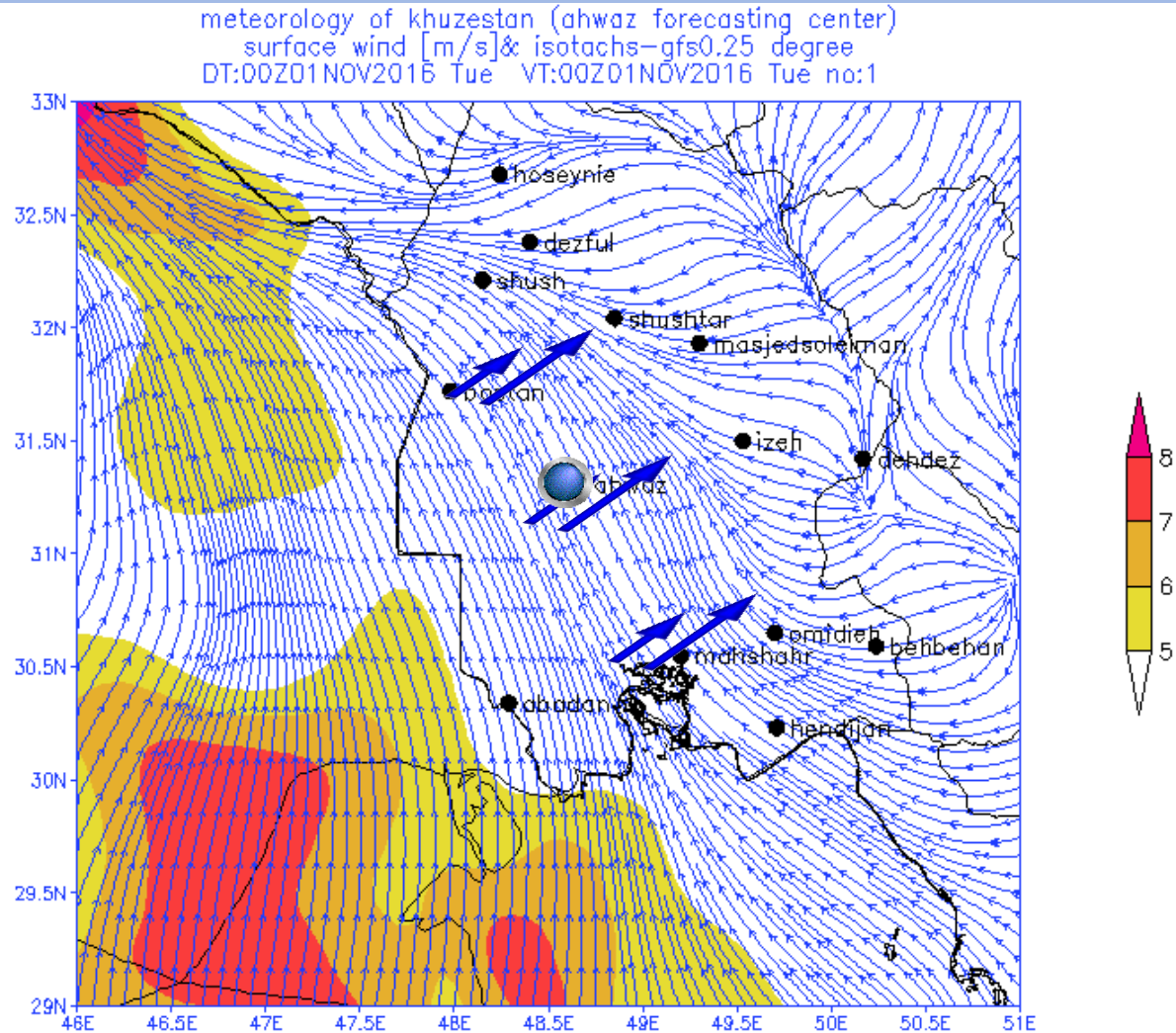
Lifted Index on November 1, 2016



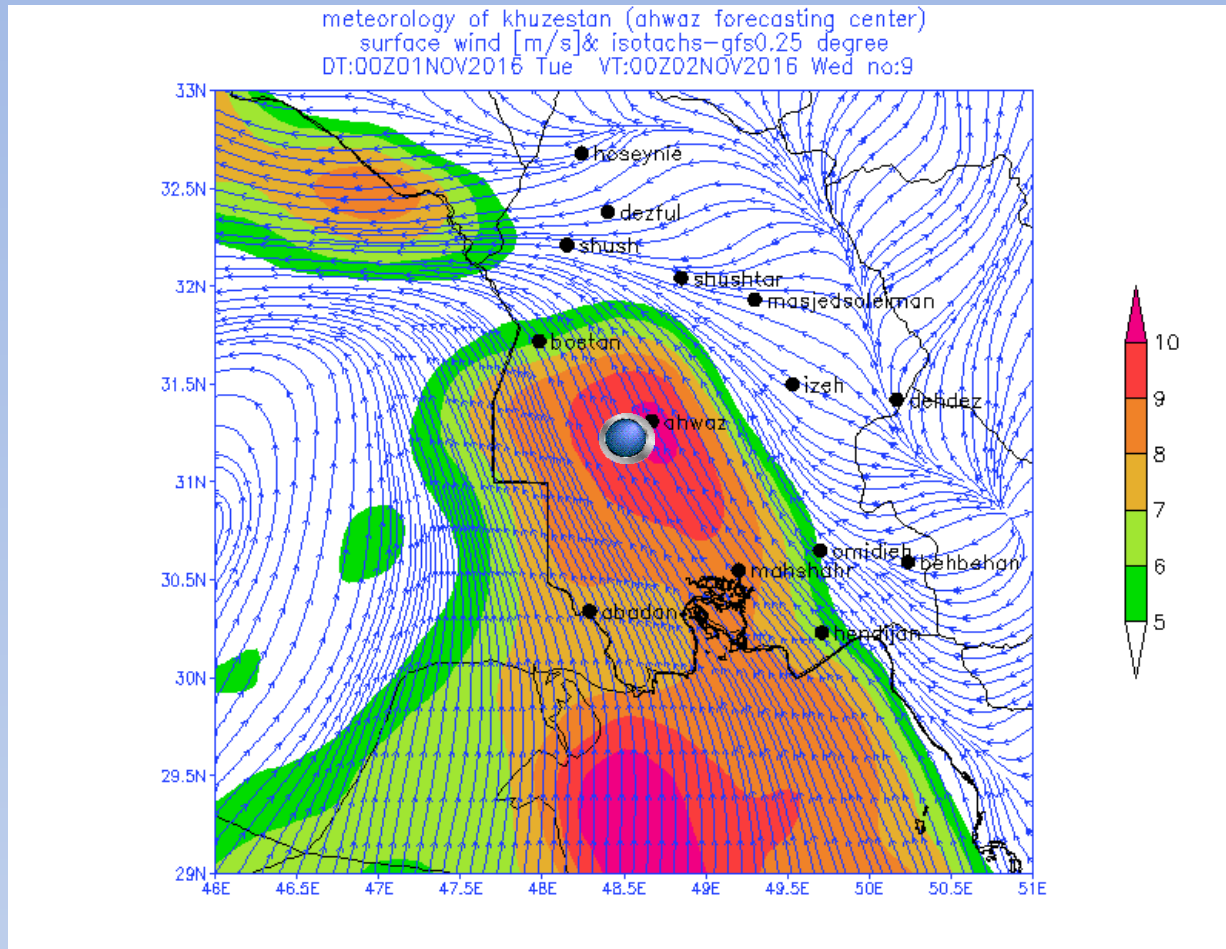
Lifted Index on November 2, 2016



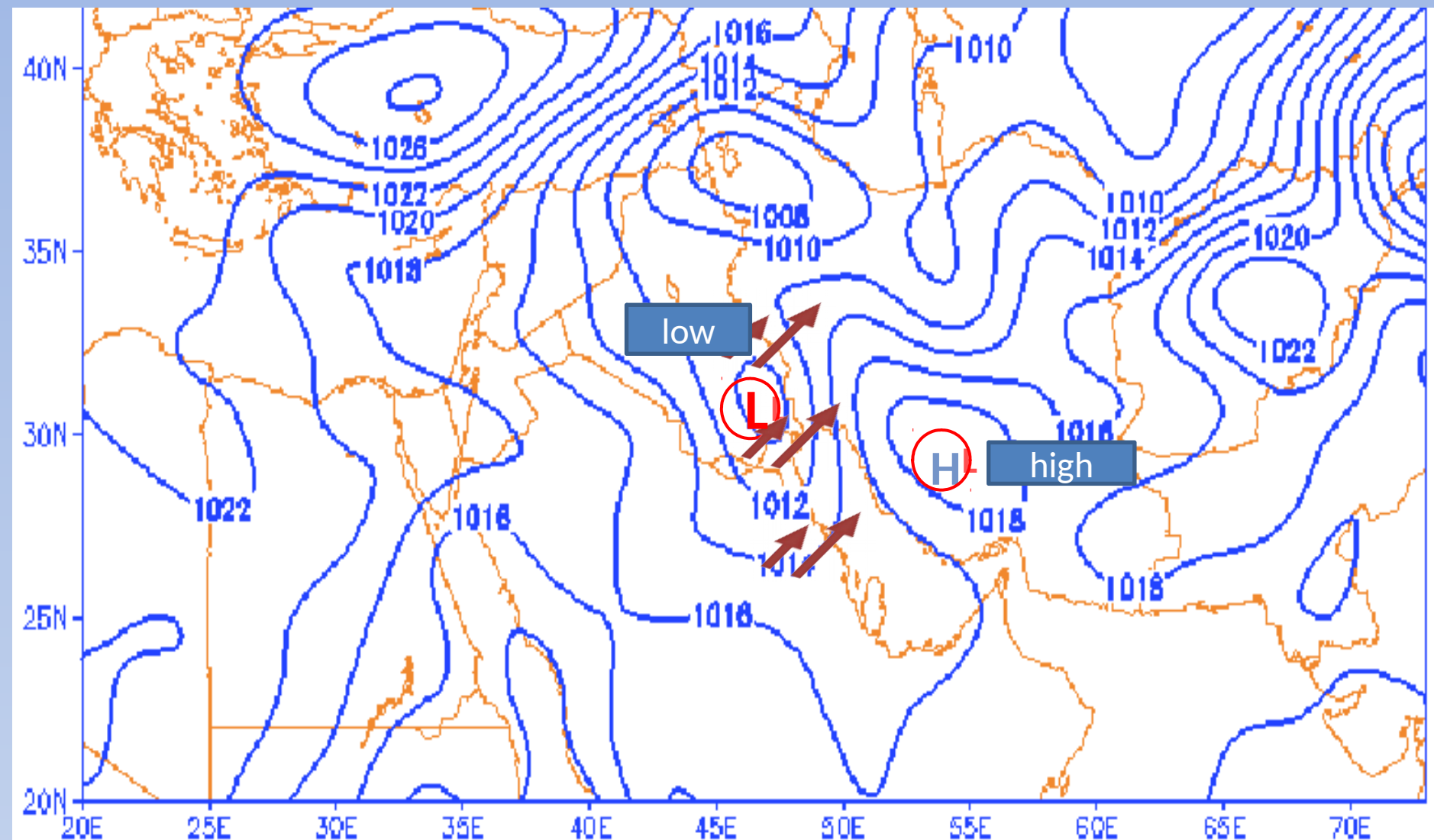
Surface wind(direction & isotach) on November 1, 2016



Surface wind(direction & isotach)on November 2, 2016

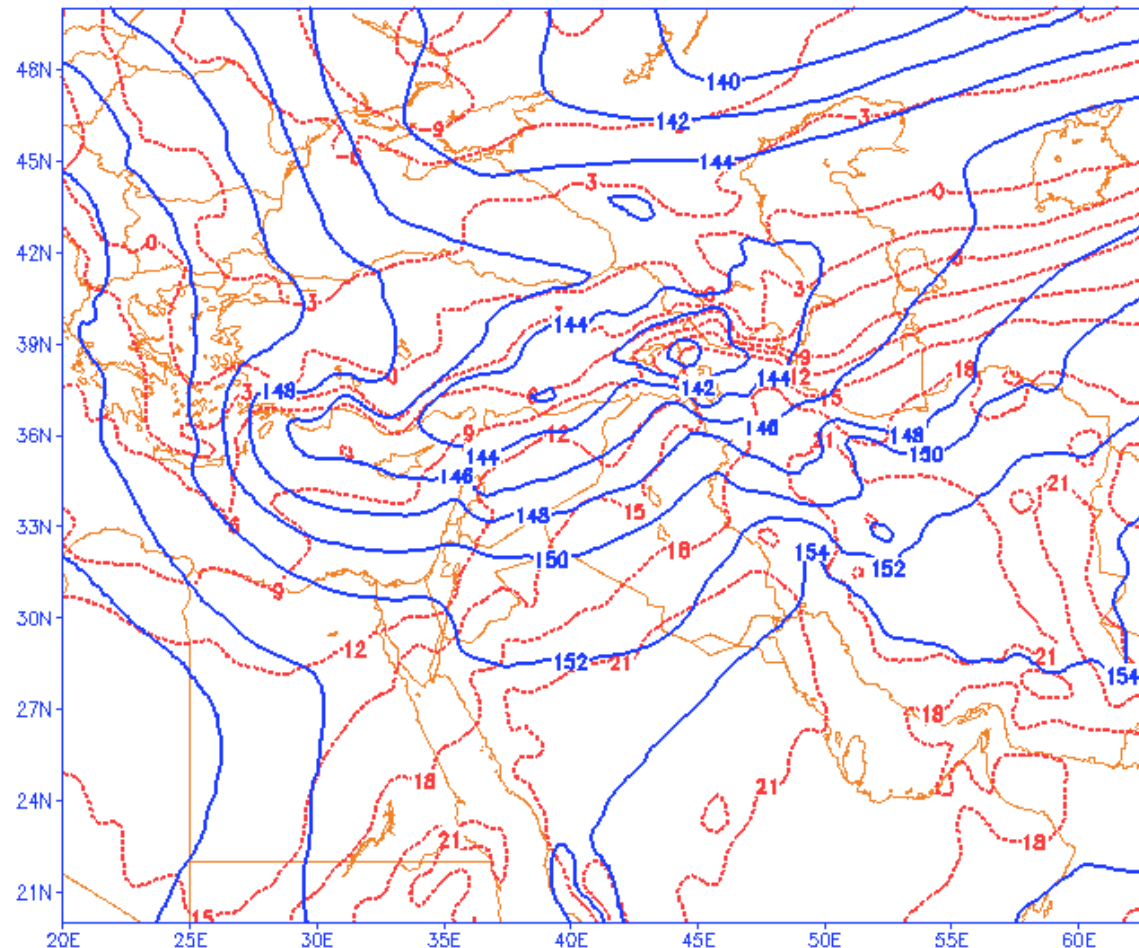


Surface map on November 2, 2016 : The air pressure gradient and south flow, due to the creation of strong winds

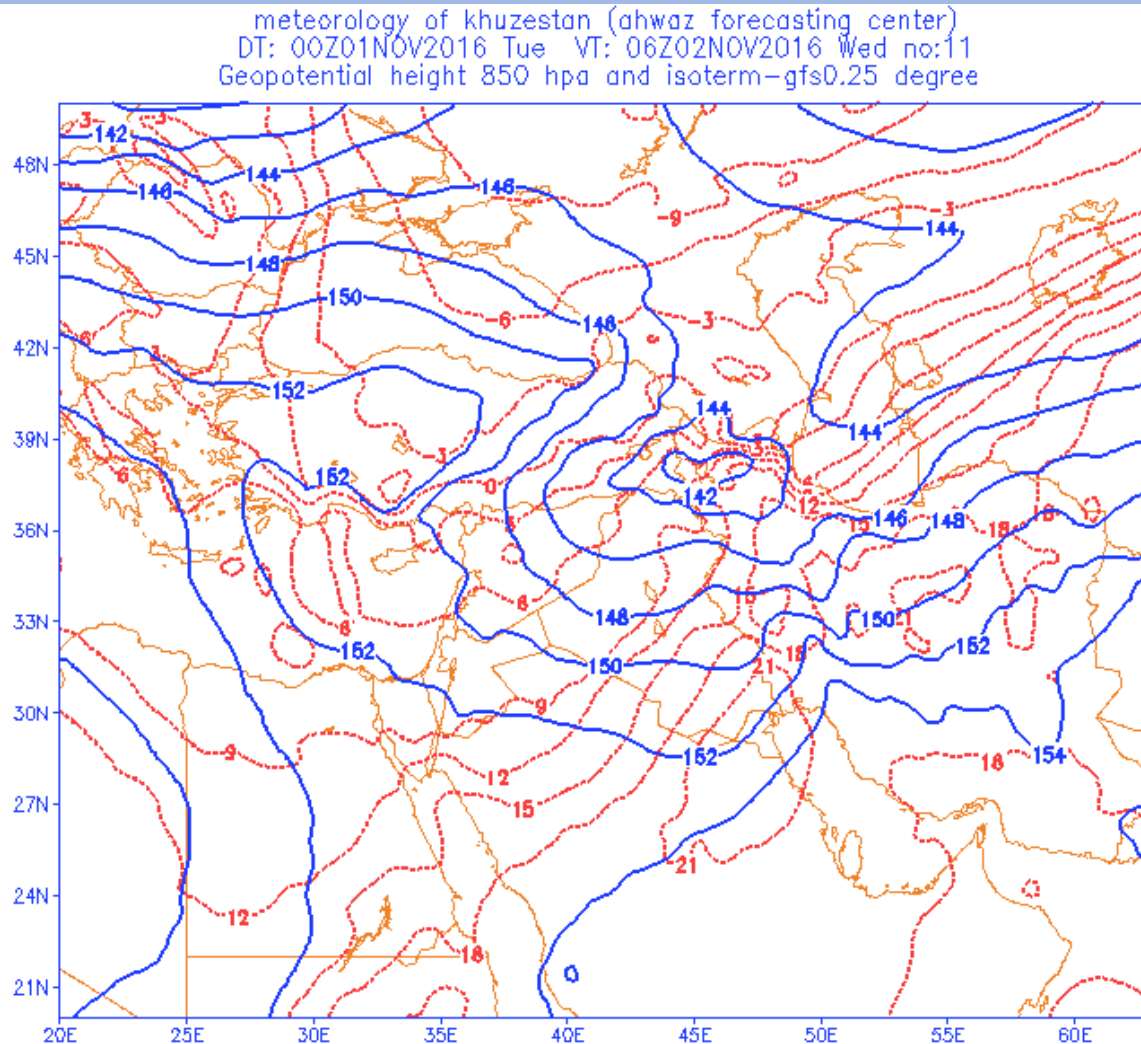


Baroclinic atmosphere in 850 hpa on November 1, 2016

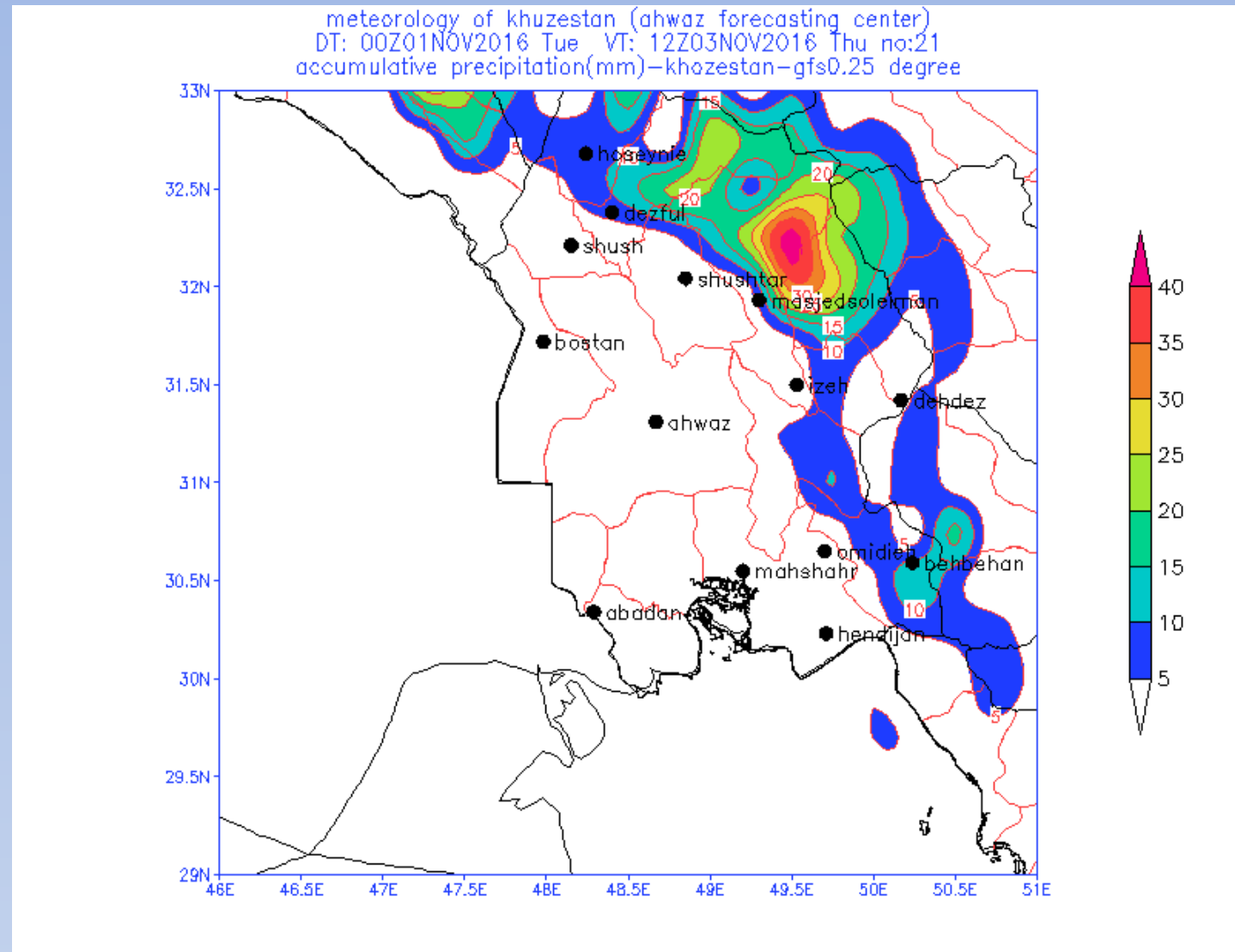
meteorology of khuzestan (ahwaz forecasting center)
DT: 00Z01NOV2016 Tue VT: 09Z01NOV2016 Tue no:4
Geopotential height 850 hpa and isotherm-gfs0.25 degree



Baroclinic atmosphere in 850 hpa on November 2, 2016



Total rainfall is forecast for both days



Erosion soil, movement and accumulate it in
rural area by wind



Sheep wool cut and remove from skin because of blowing severe wind , salt and soil with together



Wheat fields covered by dust and destroyed



Tanks for your attention

