Dust storm from Arab and West Asia affecting air quality in north-west India and Indo-Gangetic plain

- Dust storms occurred in Arabian peninsula and in Iran/Pakistan region during 4th to 6th April 2017, reached over Indian region on 5th and 6th April 2017, respectively due to strong north-easterly blowing winds (Figure 1 and 2).
- Stream of dust and sand blowing south ward from Iran and Pakistan has been observed in INSAT-3D AOD product and MODIS NCC image on 6th April 2017 (Figure 1).
- A wider stream of brown dust over Arabian sea has been observed on 6th April 2017, from wind direction it is evident that the dust stream was blowing toward north-east direction affecting north-west India and Indo-Gangetic plain (Figure 1 and 2).
- Sharp increase in INSAT-3D and AERONET aerosol optical depth (>1.0) over Jaipur and Kanpur regions has been observed on 6th and 7th April 2017 (Figure 3).
- 84 Hrs Backward trajectories ending at Delhi 1200 UTC 07/04/2017, shows that the aerosol concentration over parts of western India and Indo-Gangetic plain are affected by these two dust storm during 6th and 7th April, 2017 (Figure 4).
- AOD variation, wind direction and back trajectory analysis shows that large amount of dust has been transported from these dust storm source regions to Indian atmosphere, there by decreasing the quality of air in parts of north-western India and Indo-Gangetic plain.

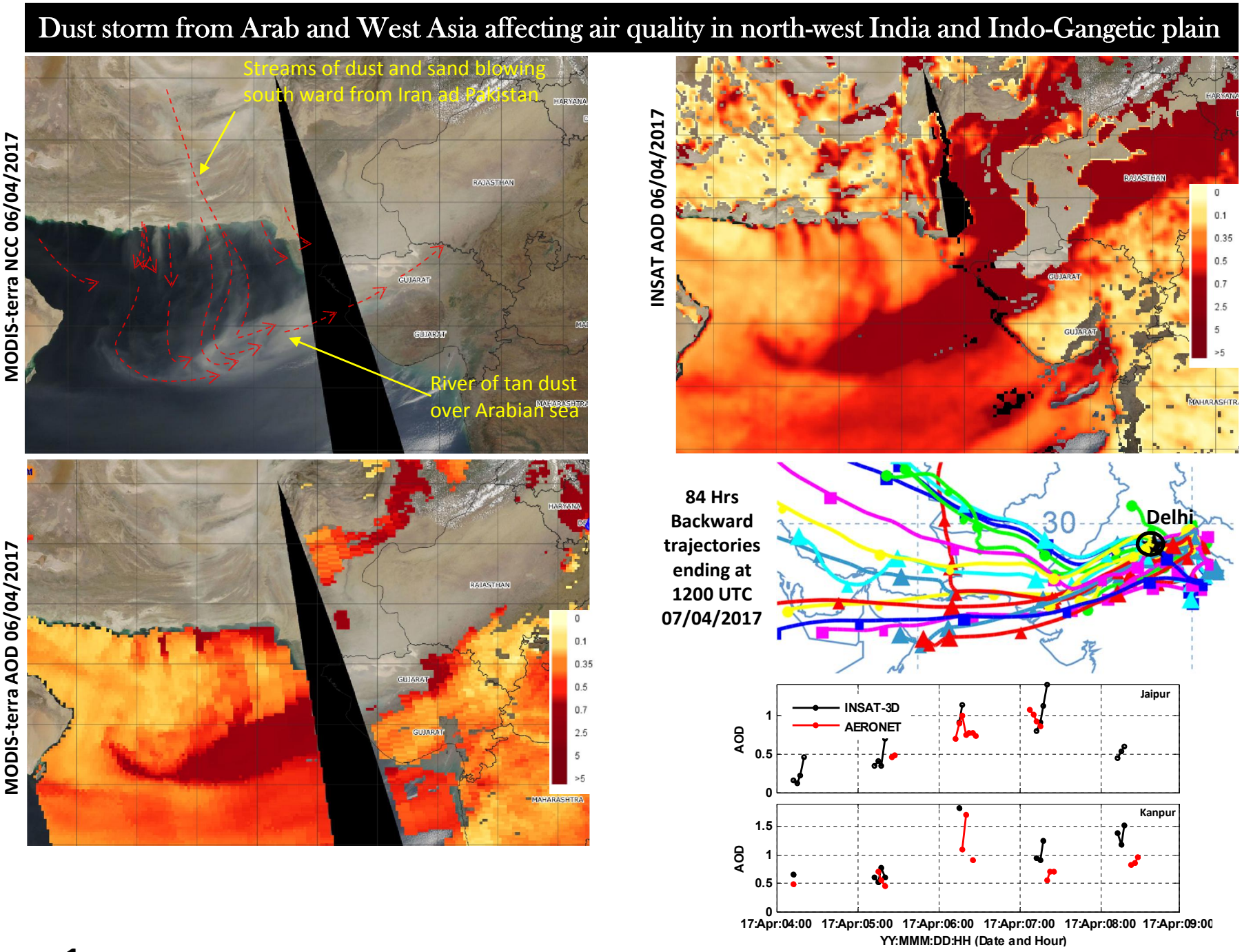

Dust storm from Arab and West Asia affecting air quality in north-west India and Indo-Gangetic plain
MODIS-terra NCC 06/04/2017
Streams of dust and sand blowing south ward from Iran ad Pakistan
River of tan dust over Arabian sea
INSAT AOD 06/04/2017
MODIS-terra AOD 06/04/2017
84 Hrs Backward trajectories ending at 1200 UTC 07/04/2017
Delhi
INSAT-3D
AERONET
Jaipur
Kanpur
AOD
17:Apr:04:00
17:Apr:05:00
17:Apr:06:00
17:Apr:07:00
17:Apr:08:00
17:Apr:09:00
YY:MMM:DD:HH (Date and Hour)

Figure 1

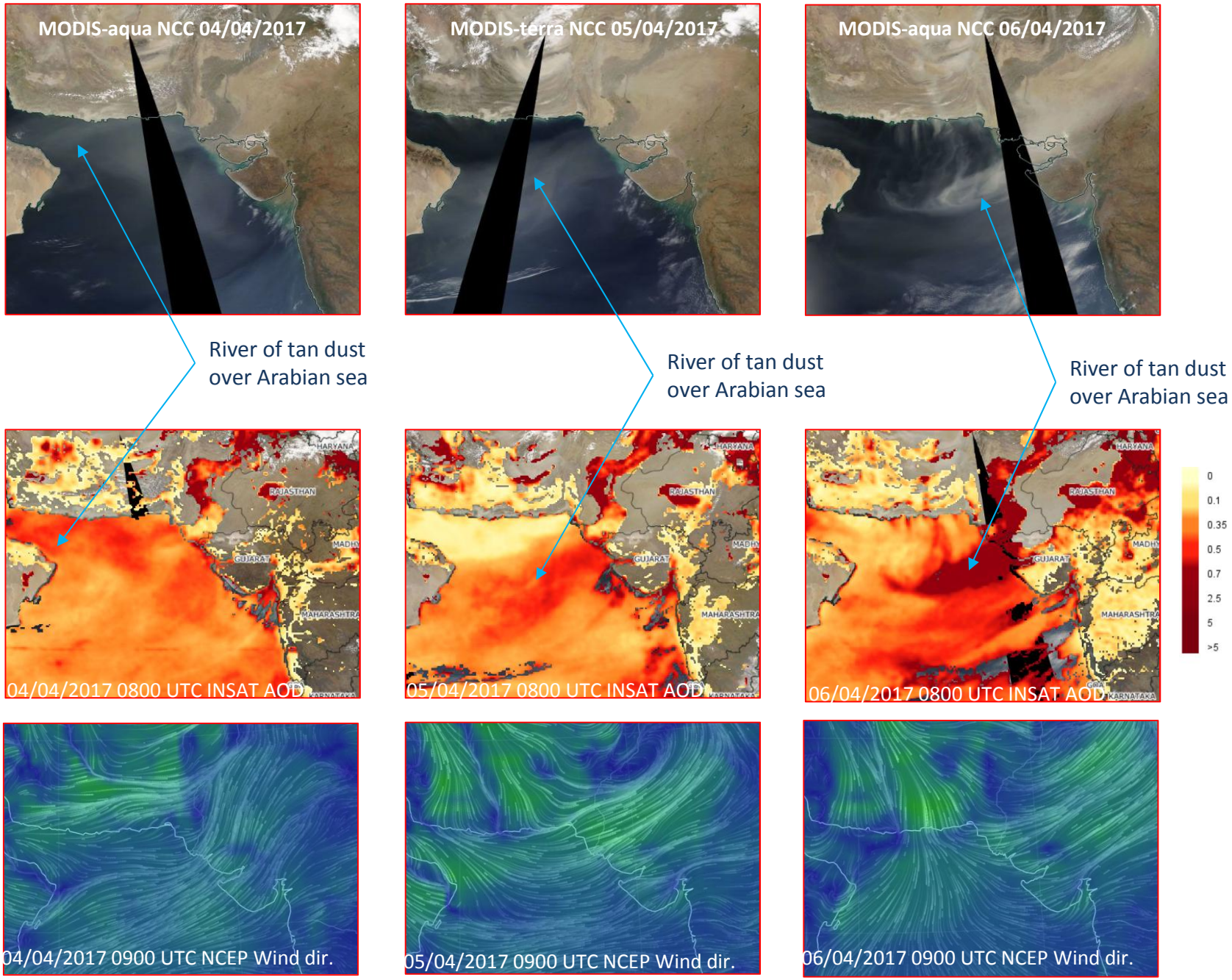
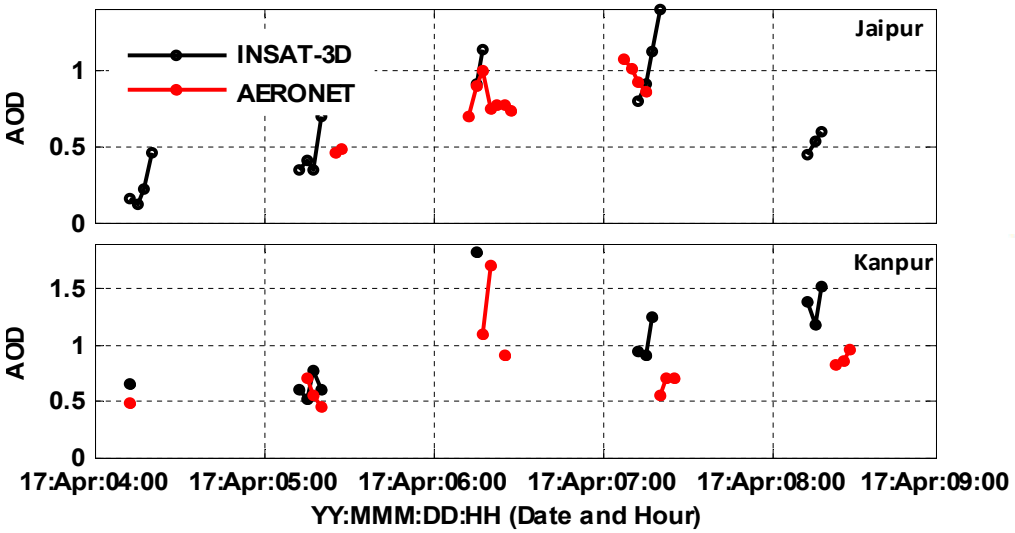

MODIS-aqua NCC 04/04/2017
MODIS-terra NCC 05/04/2017
MODIS-aqua NCC 06/04/2017
River of tan dust over Arabian sea
River of tan dust over Arabian sea
River of tan dust over Arabian sea
HARYANA
RAJASTHAN
GUJARAT
MADHY
MAHARASHTRA
KARNATAKA
0
0.1
0.35
0.5
0.7
2.5
5
>5
04/04/2017 0800 UTC INSAT AOD
05/04/2017 0800 UTC INSAT AOD
06/04/2017 0800 UTC INSAT AOD
04/04/2017 0900 UTC NCEP Wind dir.
05/04/2017 0900 UTC NCEP Wind dir.
06/04/2017 0900 UTC NCEP Wind dir.

Figure 2

AOD variation over Jaipur and Kanpur from INSAT and AERONET.



Backward trajectories ending at 1200 UTC 07 Apr 17

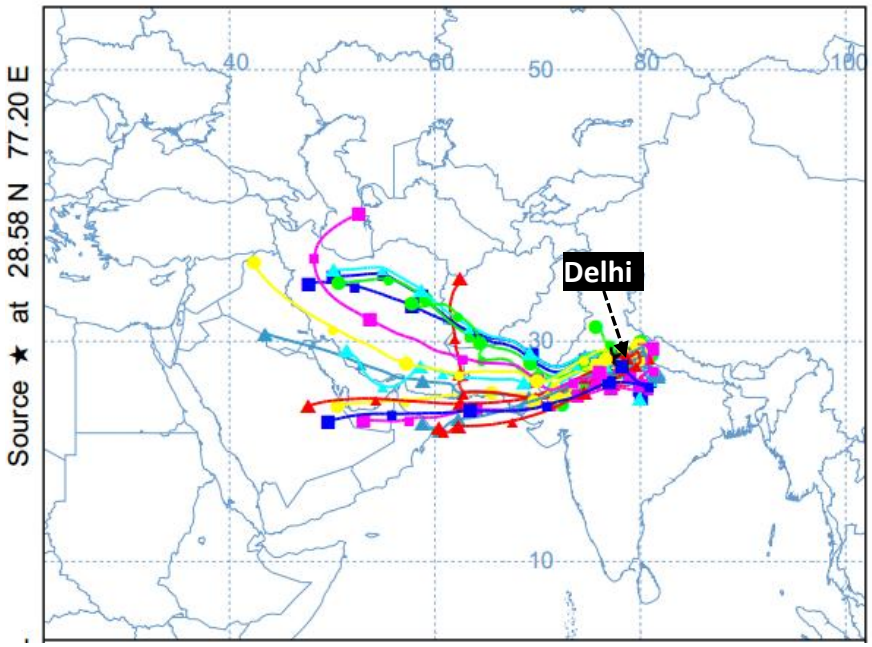


Figure 3