The IASBS Remote Sensing Stations in Iran

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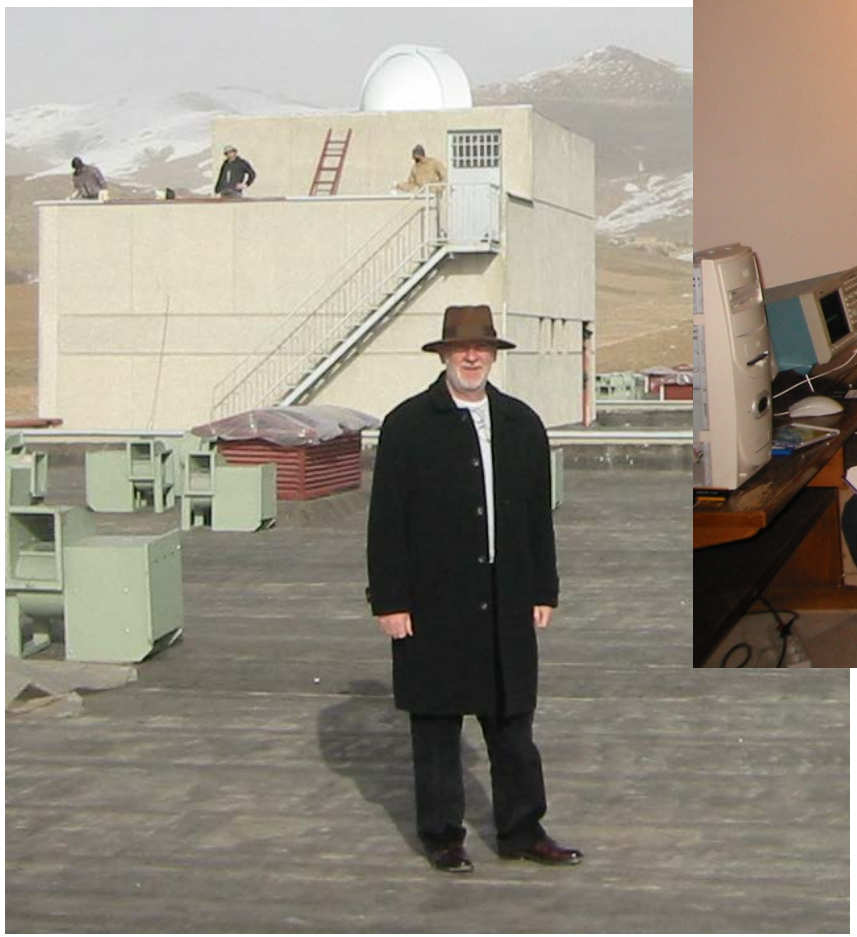
Institute for Advanced Studies in Basic Sciences (IASBS)

- Physics,
- Chemistry
- Mathematics

- Biological Sciences
- Earth Sciences
- Computer Sciences

The Lidar station in Zanjan in January 2003



BSC-DREAM8b | NMMB/BSC-Dust

NA-ME-E Domain | Asia

Locations

EARLINET Sites
Others

Romania
Black Sea
Bulgaria
Istanbul
Georgia
Caspian Sea
Azerbaijan
Uzbekistan
Kyrgyzstan
Turkey
Turkmenistan
Tajikistan
Syria
Lebanon
Iraq
Afghanistan
Israel
Jordan
Iran
Pakistan
New Delhi
Nepal
Egypt
Persian Gulf
United Arab Emirates
Saudi Arabia
Mecca
India
Red Sea
Oman
Mumbai
Sudan
Eritrea
Yemen
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November 2016

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Documentos

BSC-DREAM8b

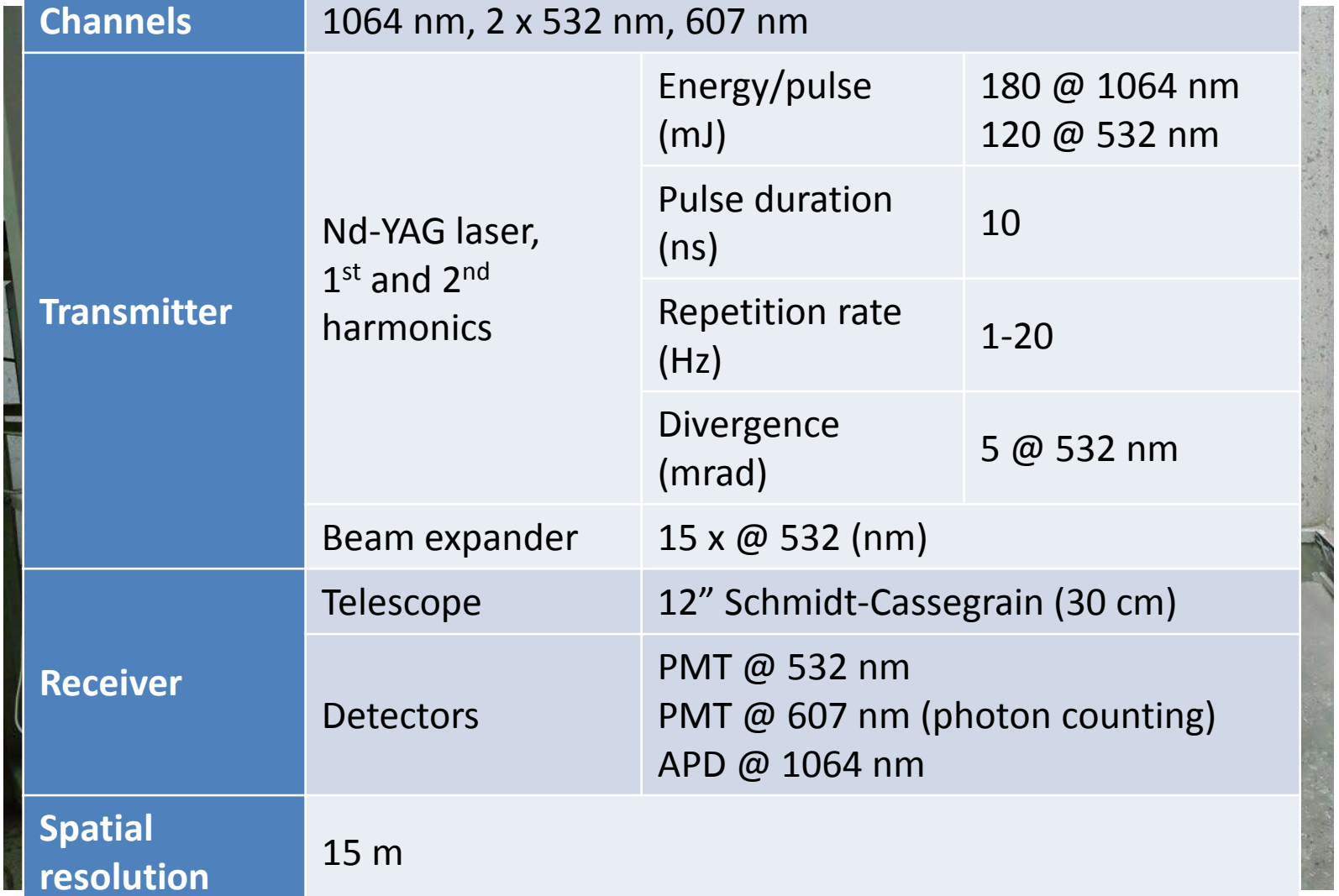
- Dust load & cloudiness
- Dust Optical Depth & Cloudiness
- Dust Dry & Wet Deposition
- Dust Surface Conc. & Prec - MSLP
- Dust concentration profiles
- Dust Vertical cross sections

NRT Evaluation

t(h) 0 6 12 18 24 30 36 42 48 54 60 66 72 ALL

What we have:

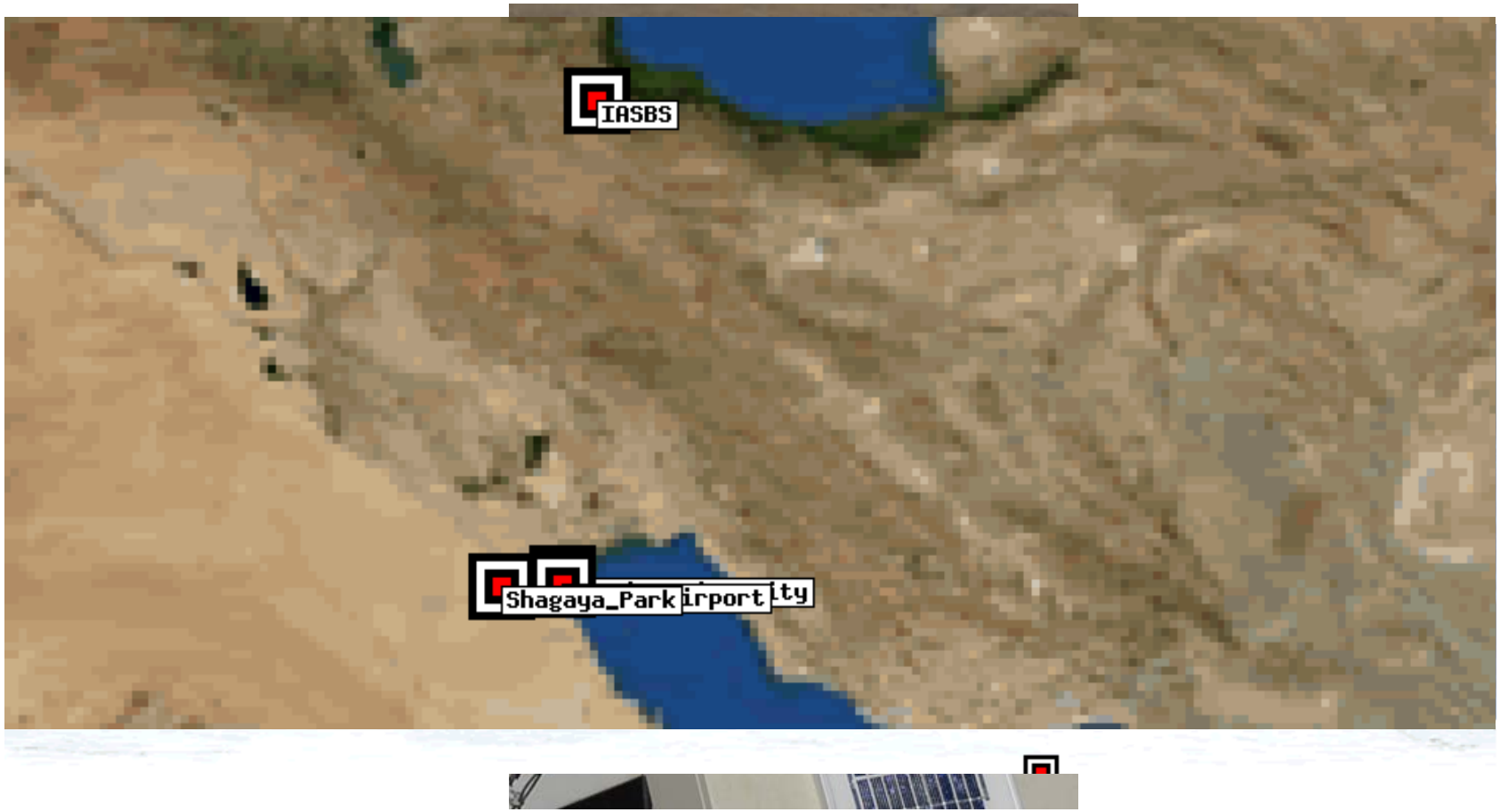
4-channel Raman Lidar in Zanjan



Channels	1064 nm, 2 x 532 nm, 607 nm		
Transmitter	Nd-YAG laser, 1st and 2nd harmonics	Energy/pulse (mJ)	180 @ 1064 nm 120 @ 532 nm
		Pulse duration (ns)	10
		Repetition rate (Hz)	1-20
		Divergence (mrad)	5 @ 532 nm
	Beam expander	15 x @ 532 (nm)	
Receiver	Telescope	12” Schmidt-Cassegrain (30 cm)	
	Detectors	PMT @ 532 nm PMT @ 607 nm (photon counting) APD @ 1064 nm	
Spatial resolution	15 m		

What we have,

Sunphotometer, Cimel CE 318-2



Aerosol Robotic Network, AERONET

What we have,

Depolarized Backscatter Lidar in Tehran

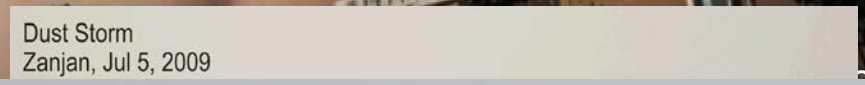
Channels	2 x 532 nm		
Transmitter	Nd-YAG laser, 1st and 2nd harmonics	Energy/pulse (mJ)	50 @ 1064 nm 40 @ 532 nm
		Pulse duration (ns)	10
		Repetition rate (Hz)	1-20
		Divergence (mrad)	5 @ 532 nm
	Beam expander	10 x @ 532 (nm)	
Receiver	Telescope	8” Cassegrain (20 cm)	
	Detectors	PMT @ 532 nm APD @ 1064 nm	
Spatial resolution	15 m		

What we have:

2- Channel Backscatter Lidar, Shiraz University

Channels	1064 nm, 532 nm		
Transmitter	Nd-YAG laser, 1st and 2nd harmonics	Energy/pulse (mJ)	100 @ 1064 nm 50 @ 532 nm
		Pulse duration (ns)	10 – 12
		Repetition rate (Hz)	1-20
	Beam expander	5x @ 532 (nm) 5x @ 1064	
Receiver	Telescope	10” Quasi Cassegrain	
	Detectors	PMT @ 532 nm APD @ 1064 nm	
Spatial resolution	12 m		


Clean Air
Zanjan, Dec 6, 2009
18 km
Photo: Farhad Vishkaee


Dust Storm
Zanjan, Jul 5, 2009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TURKEY
SEA
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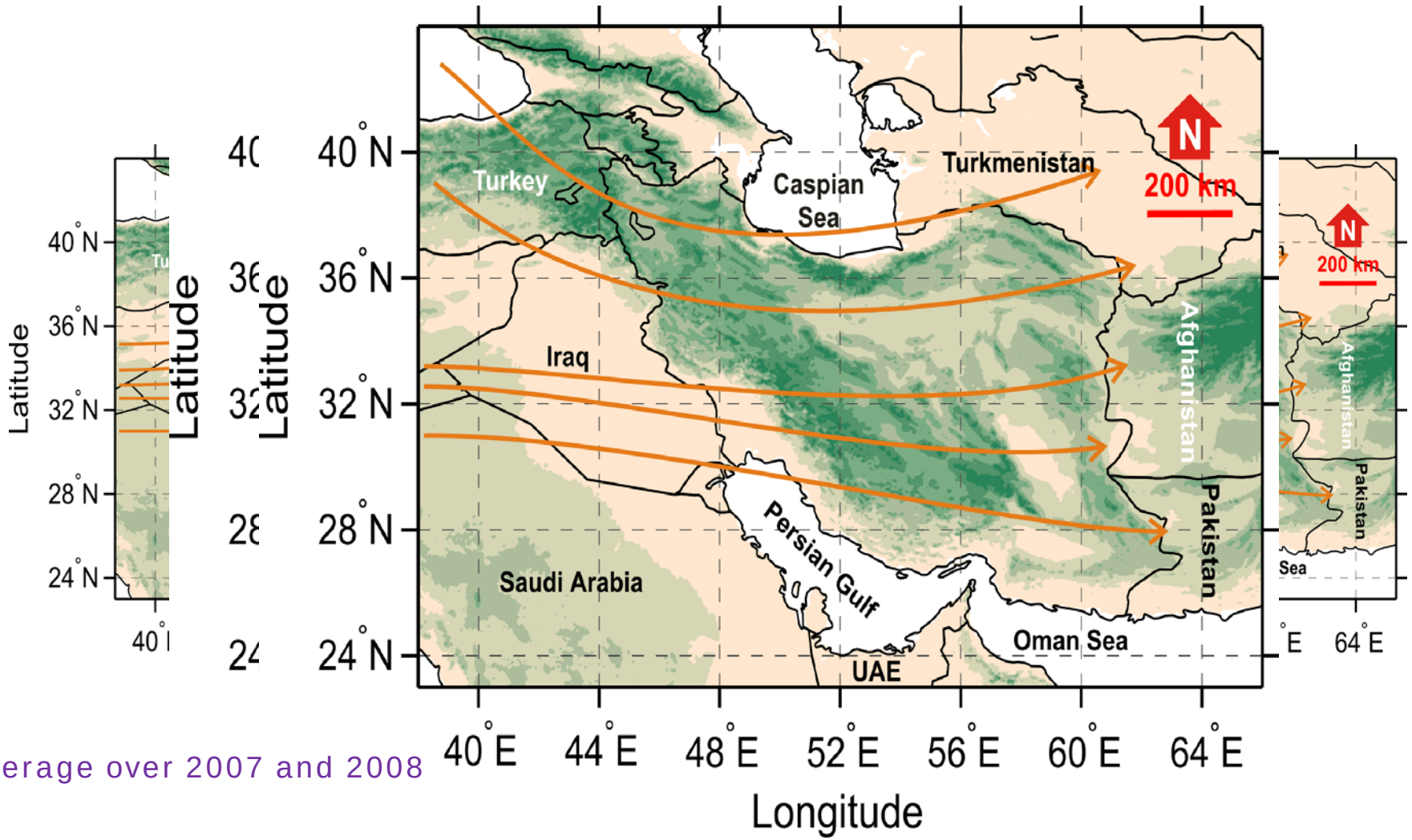
IRAN
IRAQ
AFGHANISTAN
Tabrīz
Rasht
Qazvin
Karaj
Qom
Esfahān
Shīrāz
Yazd
Kermān
Zahedān
Mashhad
Ashgabat
Baku
Turkmenbashi
Persian Gulf
Bandar-e Abbas


Mashad, July 1st 2016
بست نواب صفوی


Zabol, July 5th 2016

Wind Patterns at 700 hPa

Wind Patterns



Average over 2007 and 2008

F. Abdi Vishkaee, PhD. Thesis, 2011

What we have done

- Characterization of atmospheric aerosols and dust sources affecting Northwest Iran
- Time evolution of dust outbreaks in Northwest Iran
- Monitoring and annual variation of atmospheric pollution in Tehran.
- Characterization of the atmospheric boundary layer in Tehran
- Studies of dust events in Shiraz

What we plan to do

- To conduct Aerosols & Cloud Validation on a regular basis
- To document Extreme Desert Dust events
- To work on lidar ratio data base

In near future:

- To establish regular relationship with Lidar groups involved in ADM Aeolus CAL/VAL
- Get some support from ESA TBD

Thank You All