Station Exposure Description

Station: Ayvadzh / Айвач

Station short name:	AYVA	Operational since:	03.06.2012
Latitude:	36.97912 °	Country:	Tajikistan
Longitude:	68.02351 °	Oblast:	Khatlonskaya
Elevation [m a.s.l.]:	318.49m	River basin:	Kofirnikhon / Amudarya

Site Characteristics

Station location:

View to the station from NE

View to the station from SE

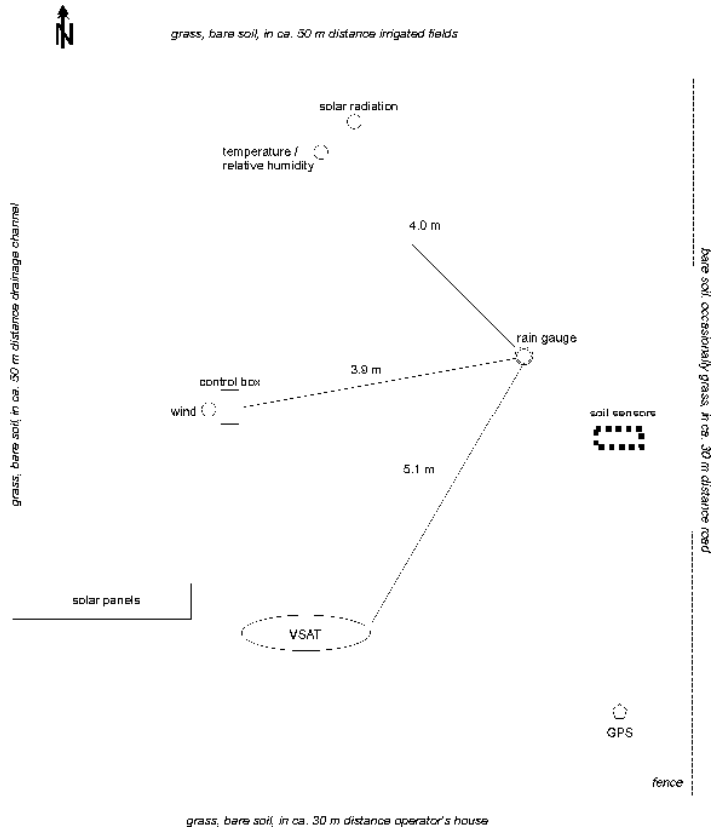
Station location and surroundings

Station Exposure Description

Terrain features:

Degree of urbanization in the surroundings:	Rural area with village; in the immediate surroundings small houses with gardens and fruit trees, further south irrigated fields (maize, cereals)
Landscape type (e.g. mountains, coast):	Broad flat river valley of Kofirnikhon river, near estuary
Direction of slope: Steep slopes, hills, hollows?	Flat and level area at the valley bottom; to the SW small hill (ca. 5 m high, bank slope of a drainage channel)
Impervious surface, pavements:	Road at a distance of ca. 30…50 m to the E of the station
Open water surfaces:	Drainage channel ca. 150 m to the W, across a small hill
Main surface cover in the surroundings:	Except for the fields and gardens, almost bare sandy soil, barely vegetated with low desert plants

Station map:



Notes and remarks:

VSAT Height in m above ground: 2.51 m

Distance new precipitation sensor – old precipitation sensor: ~ 4.7 m

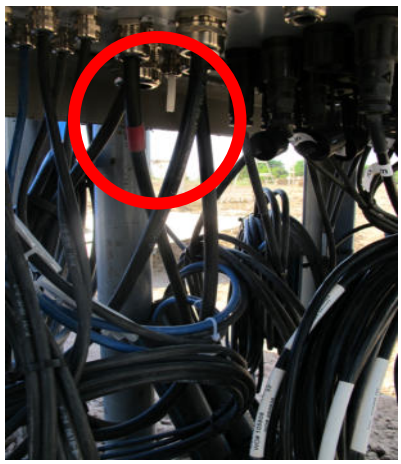
Height station control box: 1.32 m

Station Exposure Description

Sensor exposure

Atmospheric pressure:

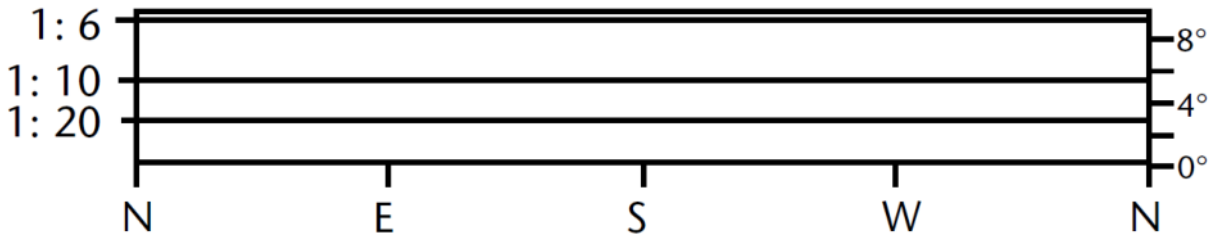
Sheltered within control cabinet?	Yes
Protected from wind gusts?	Yes



Solar radiation:

Sensor height above ground	1.85 m (center of the device)

Description of radiation horizon (average vertical angle of obstacles)



Temperature and humidity:

Sensor height in m above ground:	2.00 m (bottom edge of the radiation shield)
Artificial ventilation?	Principally available, but not activated
Surface cover under screen:	Almost bare soil, in spring some grass / low desert vegetation
Soil under screen:	Fine sand, silt

Precipitation:

Gage rim height in m above ground:	1.84 m
Shield type:	None
Alignment of main axis of tipping bucket:	N-S (main wind directions from W)
Fixation:	Not fixed, but strongly recommended as the sensor is shaking at high wind velocities

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Wind:

Anemometer height in m above ground:	10.00 m
Orientation of junction box	To the North
Free standing?	Yes
If not free standing:	
Building height, width, length in m	
Vegetation:	Almost bare soil, in spring some grass / low desert vegetation
Terrain roughness class:	to N: 1.5 to E: 1
	to S: 2 to W: 1... 1.5

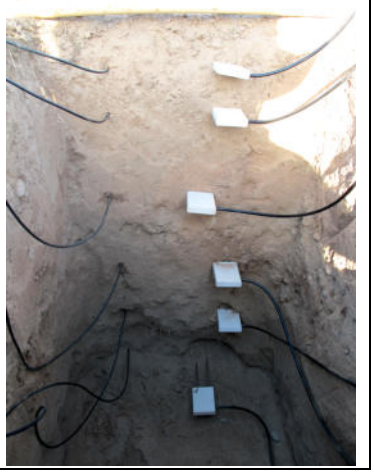
In the immediate surrounding:

At a distance of approx. 70 m from the station to the N / E / S, roughness class ca. 3 (village, gardens with trees, small houses)

Soil temperature and soil water content:

Sensor depths in m below ground:	10, 20, 40, 60, 80, 100 cm below surface
Soil cover above the soil sensors:	Almost bare soil, in spring (at the time of installation) some grass / low desert vegetation
Soil type:	Loamy- sand
Soil structure:	Fine-middle sand, some fluvial gravel, silty
Level of water table in m below surface:	Approx. 8 m below surface (according to station operator, in the nearby groundwater well)

Soil sensors locations below ground

Depth	Soil temp	VWC	Structure	
0.20			fS, u	
0.40			f-mS	
0.60			gS, gravel	
0.80			gS, sporadic gravel	
1.00				
1.20			gS, gravel	

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GPS:

Distance above surface: 1,26 m

Obstructions: Flat area

List of installed sensors:

Measurement parameter	Manufacturer	Type
Temperature and humidity	Vaisala	HMP45
Air pressure	Setra	278
Wind	RM Young	05103-45
Precipitation	RM Young	52203
Solar radiation	Hukseflux	NR01
Soil moisture	Campbell Scientific	CS616
Soil temperature	Campbell Scientific	T107

Changes and damages:

Hardware

Date	Description of change
24-10-2012	NR01 sensor changed

Software

Date	Description of Change
24-10-2012	New datalogger CR1000-configuration
25-01-2016	New datalogger CR1000-configuration (internal battery inserted)

Local Operator:

There is a local operator living at the station and cares for the station.

Open issues / limitations:

1. Radiation sensor not fully operable; shield of LW up sensor broken / glued; LW up sensor delivering data only occasionally – calculated values lacking; device should be exchanged
2. Wind sensor directed to the N not S – values corrected in datalogger CR1000-configuration
3. Cable length of precipitation sensor not sufficient for distant installation – might be too near to obstructions, though annual precipitation is low at this site
4. Temperature probe not fitting into the radiation shield – fixed with duct tape
5. Some plugs not heat-sealed