

Instruments installés sur l'observatoire SIRTA



Décembre 2021

Measured quantity	Instruments	Operating since	PI Name and lab	Location Z1 = Main observatory, Palaiseau Z2 = LMD lab roof, Palaiseau Z4b = 30m CEREAS mast, Palaiseau Z5 = LSCE lab, Orme des Merisiers	Label ACTRIS ACTRIS-FR BSRN AERONET
BSRN RADIATION STATIONS (two similar stations)					
Downwelling direct solar irradiance	Kipp&Zonen CH1 pyrheliometer	06/2003	J. Badosa (LMD)	Z2	BSRN, ACTRIS-FR
Downwelling diffuse solar irradiance	Kipp&Zonen CMP22 pyranometer	06/2003		Z2	BSRN, ACTRIS-FR
Downwelling global solar irradiance	Kipp&Zonen CMP22 pyranometer	10/2005		Z2	BSRN, ACTRIS-FR
Upwelling global solar irradiance	Kipp&Zonen CM22 pyranometer	11/2006		Z1	ACTRIS-FR
Downwelling infrared irradiance	Kipp&Zonen CGR4 pyrgeometer	06/2003		Z2	BSRN, ACTRIS-FR
Upwelling infrared irradiance	Kipp&Zonen CG4 pyrgeometer	10/2006		Z1	ACTRIS-FR
AERONET SUN and LUNAR PHOTOMETER					
Aerosol optical depth, Angström Coefficient	Cimel CE-318 sunphotometer (340-1020 nm)	07/1999	P. Goloub (LOAs)	Z2	AERONET, ACTRIS, ACTRIS-FR
CLOUD and AEROSOL LIDAR AND ALC					
Vertical profiles of backscatter and depolarization, 0-30km	IPRAL Raman Lidar	2016	M. Haefelin (IPSL)	Z1	ACTRIS, ACTRIS-FR
Vertical profiles of backscatter, 0-7km	CL31 ALC	12/2010	S. Kotthaus (IPSL)	Z1	ACTRIS-FR, E-Profile
Vertical profiles of backscatter, 0-12km	CHM15K ALC	03/2015	S. Kotthaus (IPSL)	Z1	ACTRIS, ACTRIS-FR, E-Profile
CLOUD RADAR					
Vertical profile of reflectivity and Doppler velocity (vertical pointing)	BASTA 94 GHz FMCW Doppler Radar	08/2009	J. Delanoe (LATMOS)	Z1	ACTRIS, ACTRIS-FR
Vertical profile of reflectivity and Doppler velocity on a tracker (3D)	BASTA 94 GHz FMCW Doppler Radar	11/2021	J. Delanoe (LATMOS)	Z1	ACTRIS-CCRES, ACTRIS-FR
MICROWAVE RADIOMETER					
Temperature, water vapor and liquid water profiles in BL and troposphere	Radiometer Physics GmbH HATPRO 20-30 GHz and 50-60 GHz	02/2010	JC. Dupont (IPSL)	Z1	MWRNET, ACTRIS, ACTRIS-FR
VAPOR and LIQUID WATER					
Integrated water vapor (GPS)	TRIMBLE GPS receiver	01/2006	JC. Dupont (IPSL)	Z2	GNSS, ACTRIS-FR

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Droplet size distribution	DMT Fog Monitor 120	Winter 2010	JC. Dupont (IPSL)	Z1	
Rain drop size distribution	CIMEL DBS2 Disdrometer OTT Parsivel 2	01/08/2009 01/2018	L. Barthes (LATMOS)	Z1	ACTRIS
Water vapor and rain water isotopic content	Picarro	01/2015	F. Vimeux (LSCE)	Z1	
WIND PROFILERS					
Vertical profiles of CN2 and wind	Remtech PA-2 sodar Scintec SFAS	06/2009 - 2019 2019-now	E. Dupont (CEREA)	Z1	
Vertical profiles of CN2 and wind	Degreanne UHF radar	06/2009	E. Dupont (CEREA)	Z1	E-profile
Vertical profiles of wind	Leosphere Doppler Wind lidar WLS70	06/2009	E. Dupont (CEREA)	Z1	ACTRIS
TURBULENT FLUX					
Latent and sensible heat fluxes, 2m	Licor LI-7500, Sonic anemometer (METEK, CSAT3)	2012	JC. Dupont (IPSL)	Z1	ACTRIS-FR
Latent and sensible heat fluxes, 30m	Licor LI-7200, Sonic anemometer (METEK, GILL)	06/2015	JC. Dupont (IPSL)	Z1	ACTRIS-FR
Turbulent fluxes, 2-10-30m	METEK	10/2006	E. Dupont (CEREA)	Z1, Z4b	
IN-SITU THERMODYNAMIC PROFILES					
Temperature and humidity profile (1-30m)	LICOR PT100 Vaisala HMP110	09/2011	JC. Dupont (IPSL)	Z1	
Wind profile, 0.4-7m	Campbell AR100 & W200P	09/2016	JC. Dupont (IPSL)	Z1	
Vertical profiles of pressure, temperature, humidity, and wind	Modem M10 radiosondes launched daily at 00 & 12 UTC by Météo-France	1999	F. Marin (MF)	Trappes	ACTRIS-FR, GRUAN
WEATHER SENSORS					
Temperature, 2m	Guilcor PT100	Z2, 07/2002 Z1, 11/2006	JC. Dupont (IPSL)	Z1, Z2	ACTRIS-FR
Relative Humidity, 2m	Vaisala HP110				
Atmospheric pressure, 1m	Vaisala PTB330				

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Solid and liquid precipitation	Precis Mecanique Rain Gauge R3030				
Wind speed and direction, 10m	Campbell AR100 & W200P Gill sonic 2D				
Soil temperature, surface to -100cm	Guilcor PT100	11/2006	JC. Dupont (IPSL)	Z1	
Soil humidity, -5 to -100cm	Delta-T ThetaProble ML2X				
Soil flux, -5 to -100cm	Hukseflux HFP01SC				
Horizontal visibility at 4m	Degreanne DF320	01/2010	JC. Dupont (IPSL)	Z1	ACTRIS-FR
Horizontal visibility at 20m	Vaisala PWD22	01/2013	JC. Dupont (IPSL)	Z1	ACTRIS-FR
AEROSOL IN-SITU MEASUREMENT					
Online PM1 Chemistry	ACSM	2011	J.-E. Petit, CEA	z5	ACTRIS
Absorption (Black Carbon) PM1	AE33	2013	J.-E. Petit, CEA	z5	ACTRIS
Scattering PM2.5	AURORA3000	2019	O. Favez, INERIS	z5	ACTRIS
Extinction PM2.5	CAPS	2021	O. Favez, INERIS	z5	ACTRIS-FR
Number Size Distribution PM1	SMPS	2012	J.-E. Petit, CEA	z5	ACTRIS
Number Concentration	CPC 3750	2020	J.-E. Petit, CNRS	z5	ACTRIS
Online Organic Carbon / Elemental Carbon PM1	TCA + AE33	2021	O. Favez, INERIS	z5	ACTRIS-FR
Offline Organic Carbon / Elemental Carbon PM2.5	Partisol + Sunset	2012	J.-E. Petit, CNRS	z5	ACTRIS
Offline PM10 Chemistry	DA80	2016	O. Favez, INERIS	z5	ACTRIS-FR
Offline PM2.5 Chemistry	Partisol	2012	O. Favez, INERIS	z5	ACTRIS
PM1 Concentration	TEOM FDMS	2012	J.-E. Petit, CNRS	z5	ACTRIS-FR
PM2.5 Concentration	TEOM FDMS	2013	O. Favez, INERIS	z5	ACTRIS-FR
PM10 Concentration	TEOM FDMS	2013	J.-E. Petit, CEA	z5	ACTRIS-FR
PMx Mass Concentration	FIDAS	2016	J.-E. Petit / R.S.E., CEA	z5	ACTRIS-FR
TRACE GASES IN-SITU MEASUREMENT					
NO, NO2	TELEDYNE 200UP	01/2013	V. Gros	z5	ACTRIS
O3	TELEDYNE T400	01/2013	V. Gros	z5	ACTRIS-FR

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COV	PTR-QMS	01/2020	V. Gros	z5	ACTRIS
NH3	LSE Monitors	2020	J.E. Petit, CEA	z5	ACTRIS-FR