

<O3>
Bukit Koto Tabang

Indonesia 0.2°S,100.32°E 864.5m

Information on Contributor

<Contributor(s)>

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Country/Territory	Indonesia

Organization	Swiss Federal Laboratories for Materials Testing and Research
Acronym	EMPA
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Information on Station

Name	Bukit Koto Tabang
Station Organizer	Badan Meteorologi dan Geofisika
Location (Latitude, Longitude)	0.2°S, 100.32°E
Altitude	864.5m
Station Category	Stationary
Platform	Ground base
GAW Category	Global
Country/Territory	Indonesia
Address	PO.BOX 11 Bukit Tinggi 26100. Jalan Raya Bukit Tinggi - Medan Km. 17 Desa Muaro Kec. Palupuh West Sumatera, Indonesia
Time zone	
WMO Region	REGION V (South-West Pacific)
Description	The station is roughly 17 km north of the small town Bukittinggi and around 120 km north of Padang which the capital of the province West Sumatra. The remote station Bukit Kototabang (which means Bukit=Hills) is situated in the equatorial zone on the ridge of a high Barisan plateau at an altitude of 864.5 m a.s.l., and 40 km off the western coastline. The prevailing winds are blowing either from south-south-east (December to May) or from north-north-west (May to October). The temperature varies from 16 to 25 °C with only slight annual variation and the relative humidity is usually higher than 80%, and the annual precipitation is >3000 mm. The facilities at the site consist of a large one-story building, which provides excellent space for offices, meeting room and laboratories. On the 300 m ³ flat roof, the air inlet and several radiation and meteorological equipment are mounted. The station is reached over a small access road which is closed to the public and is a few kilometres off the westerly main road (moderate traffic) between Padang and Medan. The vegetation in the surrounding area (30 km) consists mainly of tropical forest.

Information on Obervation

Category	Air sampling observation
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Sampling type	continuous
Sampling Height/Depth	4.5 m
Sampling and Analysis Frequency	Continuous, 1-minute aggregates (since 2006), 10-minute aggregates (2001-2005), 1-hour aggregates (until 2000)
Sampling Environment	The station is located in the middle of tropical rain forest. Local sources of ozone precursors include biomass burning from domestic and subsistence farming activities. The site is influenced by biomass burning in East Sumatra.
Measurement Method	Light absorption analysis (UV)
Current status and history of Instruments	see above
Description of Instruments	Thermo Environmental Instruments Inc. , USA TEI49 (S/N49-51974-290) since 1996 TEI49C (S/N 49C-58547-318) since 09/2006
Time zone	Local time UTC+7
Data period	1996-09-01 - 2007-12-27
Other Descriptions for Sampling and Analyses	Surface ozone measurements were initiated at Bukit Koto Tabang in 1996 by Mick Meyer from CSIRO. The set-up, consisting of a TEI49 (S/N 49-51974-290) and a TEI49PS (S/N 49PS-52307-291) instrument, both fully automated and controlled by a custom-built unit, is described elsewhere [Meyer et al., 1998]. The measurements were interrupted between August 1999 and July 2001 due to a complete failure of the control and data acquisition unit. This unit was replaced by QA/SAC Switzerland and WCC-Empa in July 2001 [Zellweger et al., 2001]. Further, the inlet line was significantly shortened, and a modified refrigerator was installed to lower the dew point of sample air going through the instrument. No significant ozone loss was found over the inlet line and filter, but the refrigerator caused an average ozone loss of 0.8%. The instrument has been in operation in this configuration continuously since then. In September 2006, a TEI49C (S/N 49C-58547-318) instrument was provided to the station. This instrument has higher resolution and is less noisy than the TEI49. It shares the inlet with the TEI49 and has served as the main instrument since its installation.

Information on Processing/Calibration

Current Scale	WMO/GAW (SRP)
Scale and Calibration (traceability)	Measurements are traceable to SRP#2. The traceability chain consists of periodic inter-comparisons of SRP#2 with SRP#15, internal consistency checks of SRP#15 against several other SRPs, calibration of a transfer standard instrument (TEI 49C PS), and transfer of the scale to the field instrument about every 2 years. On site, inter-comparisons between the field instrument(s) and a TEI 49 PS are conducted every 2 months.
Measurement Calibration	

Processing	Raw data were 10-minute averages provided from the instrument internal data logger. These data were visually inspected, invalid data were flagged, and a zero- and span-corrected data set was computed based on the TEI49-TS-(SRP) inter-comparisons conducted by WCC-Empa.
Processing on hourly data	Average of 10-minute values. No criterion for minimum data-availability was applied.
Processing on daily data	Average of 1-hourly values. No criterion for minimum data-availability was applied.
Processing on monthly data	Average of daily values. No criterion for minimum data-availability was applied.
Measurement Unit	ppb
Flag	No classification of data was performed.
Data Remarks	The column 'REM' indicates the estimated combined standard uncertainty of 1-hourly values, computed according to Klausen et al. (2003).
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Other Information

Scientific Aim of observation	Assessment of Air quality, background concentrations, long-range transport of air pollutants, climate change, source apportionment
References	http://gaw.empa.ch/gawsi