

[Home](#)

[Online Library ACP](#)

- ▣ [Recent Final Revised Papers](#)
- ▣ [Volumes and Issues](#)
- ▣ [Special Issues](#)
- ▣ [Library Search](#)
- ▣ [Title and Author Search](#)

[Online Library ACPD](#)

[Alerts & RSS Feeds](#)

[General Information](#)

[Submission](#)

[Review](#)

[Production](#)

[Subscription](#)

[Comment on a Paper](#)

Impact  
Factor  
4.927

ISI  
indexed



▣ [Volumes and Issues](#) ▣ [Contents of Issue 1](#)

Atmos. Chem. Phys., 10, 29-37, 2010

[www.atmos-chem-phys.net/10/29/2010/](http://www.atmos-chem-phys.net/10/29/2010/)

© Author(s) 2010. This work is distributed under the Creative Commons Attribution 3.0 License.

## Study of successive contrasting monsoons (2001–2002) in terms of aerosol variability over a tropical station Pune, India

R. L. Bhawar<sup>1</sup> and P. C. S. Devara<sup>2</sup>

<sup>1</sup>DIFA, Università degli Studi della Basilicata, Viale dell'Ateneo Lucano n. 10, 85100 Potenza, Italy

<sup>2</sup>Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, Pashan, Pune, Maharashtra 411 008, India

**Abstract.** The present study suggests that aerosols play a major role in cloud formation and affect significantly the precipitation over a regional scale. The study reveals that there is a high variability of aerosol index during a bad monsoon year 2002, indicating an extension of cycle to more than 100 days from a normal 50 day cycle of absorbing and non-absorbing aerosols over a tropical urban station Pune. Pre-monsoon of 2002 shows a high loading of coarse-mode aerosols (absorbing dust aerosols) which indicate vertical and horizontal temperature variations in turn affecting the seasonal rainfall at a regional scale. Cloud formation highly depends on aerosol concentration, but the activation process is not monotonic. The surface meteorological features help to initiate the cloud process. The surface temperatures were high during the pre-monsoon of 2002 leading to increase of aerosol optical depth as compared to 2001. The effect of surface wind speed, though, complicated to understand, results in low values in 2002 with high aerosol optical depth and vice-versa in 2001.

▣ [Final Revised Paper](#) (PDF, 776 KB) ▣ [Discussion Paper](#) (ACPD)

Citation: Bhawar, R. L. and Devara, P. C. S.: Study of successive contrasting monsoons (2001–2002) in terms of aerosol variability over a tropical station Pune, India, Atmos. Chem. Phys., 10, 29-37, 2010. ▣ [Bibtex](#) ▣ [EndNote](#) ▣ [Reference Manager](#)



[Search ACP](#)

Library Search

Author Search

[News](#)

- ▣ [New Tax Regulation for Service Charges](#)
- ▣ [Sister Journals AMT & GMD](#)
- ▣ [Public Relations & Background Information](#)

[Recent Papers](#)

01 | ACPD, 18 Jan 2010: Synergetic use of millimeter and centimeter wavelength radars for retrievals of cloud and rainfall parameters

02 | ACPD, 18 Jan 2010: Observational constraints on the global atmospheric budget of ethanol

03 | ACPD, 18 Jan 2010: Estimated total emissions of trace gases from the Canberra wildfires of 2003: a new method using satellite measurements of aerosol optical depth and the MOZART chemical transport