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| 1. Record Nr.           | UNISA996199118303316                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Titolo                  | Volatile organic compounds in the atmosphere [[electronic resource] /]<br>/ edited by Ralf Koppmann                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Pubbl/distr/stampa      | Oxford ; ; Ames, Iowa, : Blackwell Pub., 2007                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ISBN                    | 1-281-32017-X<br>9786611320171<br>0-470-98865-7<br>0-470-99415-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Edizione                | [1st ed.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Descrizione fisica      | 1 online resource (522 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Altri autori (Persone)  | KoppmannRalf                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Disciplina              | 511.51/12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Soggetti                | Organic compounds - Environmental aspects<br>Air quality management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Note generali           | Description based upon print version of record.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nota di contenuto       | Volatile Organic Compoundsin the Atmosphere; Contents; Preface; List of Contributors; 1. Volatile Organic Compounds in the Atmosphere: An Overview; 1.1 Introduction; 1.2 Sources; 1.3 Sinks; 1.4 Atmospheric distribution; 1.5 Measurement tools; 1.6 Modelling tools; 1.7 How organic species affect the atmosphere; 1.8 Open questions and future directions; References; 2. Anthropogenic VOCs; 2.1 Introduction; 2.2 Sources of anthropogenic VOCs; 2.3 Atmospheric distribution of VOCs; 2.4 Chemical behaviour of VOCs in the atmosphere; 2.5 Measurement techniques; References; 3. Biogenic VOCs<br>3.1 Introduction3.2 Sources of biogenic VOCs; 3.3 Emission inventories of biogenic VOCs; 3.4 Global distribution of biogenic VOCs; 3.5 Impact on photooxidants and atmospheric chemistry; 3.6 Sampling and measurement techniques; 3.7 Future directions; References; 4. Oxygenated Volatile Organic Compounds; 4.1 Introduction; 4.2 Tropospheric mixing ratios and global distribution; 4.3 Sources of OVOCs; 4.4 Sinks of OVOCs; 4.5 Budgets and emission inventories; 4.6 Sampling and measurement techniques; 4.7 Future directions; Acknowledgement; References; 5. Halogenated Volatile Organic Compounds |

5.1 Introduction5.2 Sources of halogenated VOCs; 5.3 Atmospheric concentrations: trends and distribution; 5.4 Sinks of halogenated VOCs; 5.5 Emission inventories; 5.6 Sampling techniques; 5.7 Measurement techniques; References; 6. PAN and Related Compounds; 6.1 The chemistry of PANs; 6.2 Atmospheric formation; 6.3 Measurement and calibration techniques; 6.4 Atmospheric measurements; 6.5 Modelling and interpretation of ambient measurements; 6.6 Conclusions; Acknowledgements; References; 7. Organic Nitrates; 7.1 Introduction; 7.2 Production mechanism; 7.3 Measurement methods 7.4 Atmospheric measurements7.5 Fate; 7.6 Conclusions; References; 8. High-Molecular-Weight Carbonyls and Carboxylic Acids; 8.1 Introduction; 8.2 Sources; 8.3 Atmospheric levels; 8.4 Reactivity and impact on the atmosphere; 8.5 Sampling and analysis; 8.6 Conclusions; References; 9. Organic Aerosols; 9.1 Introduction; 9.2 Carbonaceous aerosols; 9.3 Analysis of organic aerosols; Further reading; References; 10. Gas Chromatography-Isotope Ratio Mass Spectrometry; 10.1 Introduction; 10.2 Fundamentals of stable isotope ratios of VOCs; 10.3 Experimentalmethods; 10.4 Kinetic isotope effects

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## Sommario/riassunto

Every day, large quantities of volatile organic compounds (VOCs) are emitted into the atmosphere from both anthropogenic and natural sources. The formation of gaseous and particulate secondary products caused by oxidation of VOCs is one of the largest unknowns in the quantitative prediction of the earth's climate on a regional and global scale, and on the understanding of local air quality. To be able to model and control their impact, it is essential to understand the sources of VOCs, their distribution in the atmosphere and the chemical transformations which remove these compounds from the a

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