

Contents

1.	Foreword	3
2.	Atmospheric Remote Sensing – Instrument Operation, Calibration and Measurement Techniques	5
2.1	SCIAMACHY Level 0-2 Processing.....	5
2.2	The Satellite Collocation Tool and Validation of the SCIAMACHY Ozone Profiles	9
2.3	SCIAMACHY Operations Support	11
2.4	Hard Drive Encryption	13
3.	Atmospheric Remote Sensing – Retrieval Methods	15
3.1	SCIAMACHY Methane Retrievals	15
3.2	Assessment of Independent Macrophysical Cloud Properties in the Oxygen A-Band.....	17
3.3	Multi-Dimensional Radiative Transfer	19
3.4	Current Status and Recent Results of TELIS Retrievals.....	21
3.5	Intercomparison of the GARLIC and PIRATES IR Radiative Transfer Codes	23
3.6	A Case Study on the Reciprocity in Light Scattering Computations	24
3.7	Dust/Urban Aerosol Radiative Forcing Based on Surface Aerosol Measurements	26
3.8	Light Scattering of 3D Chebyshev Particles.....	28
3.9	New Database Interfaces for the WDC-RSAT.....	30
4.	Atmospheric Remote Sensing – Applications	33
4.1	DLR Science Award 2011: Global Long-term Environmental Satellite Data for Climate Monitoring	33
4.2	Tropospheric Trace Gas Products from GOME-2.....	38
4.3	Spaceborne Measurements of Air Quality During the World Expo 2010 in Shanghai.....	41
4.4	The Light Scattering Laboratory within the DLR_School_Lab Neustrelitz	45
4.5	Spectroscopic Characterization of the Atmospheres of Potentially Habitable Planets: GL 581 d as a Model Case Study	47
4.6	High Resolution Infrared Emission Spectra of Earth-like Planets Influenced by Clouds.....	49
4.7	Textbook SCIAMACHY – Exploring the Changing Earth’s Atmosphere.....	51
5.	Documentation	53
5.1	Books and Book Contributions.....	53
5.2	Journal Papers.....	54
5.3	Conference Proceeding Papers and Presentations	56
5.4	Attended Conferences and Professional Leaves.....	59
5.5	Diploma and Doctoral Theses.....	60
5.6	Seminar Talks.....	61
	Abbreviations and Acronyms.....	63