

CONTENTS

1. INTRODUCTION	5
2. PHYSICOGEOGRAPHICAL DESCRIPTION.....	9
2.1 Localization.....	9
2.2 Geology	9
2.3 Orography.....	9
2.4 Climate	9
2.5 Hydrology	9
2.6 Hydrobiology	10
2.7 Pedology	10
2.8 Biogeography.....	10
2.8.1 Fauna	10
2.8.2 Vegetation.....	11
3. ANALYSIS OF THE EMISSION SITUATION AROUND THE KOŠETICE OBSERVATORY.....	12
3.1 Introduction	12
3.2 Methodology	12
3.3 Results	13
3.4 Conclusion	16
3.5 References	16
4. MEASUREMENTS CARRIED OUT AT THE KOŠETICE OBSERVATORY AND ADJACENT INFRASTRUCTURES	17
4.1 Site coding	17
4.1.1 Meteorology, air and precipitation quality	17
4.1.2 Surface water	17
4.1.3 Soil and biotic components.....	17
4.1.4 Basin as a whole.....	17
4.2 Frequency of measurements.....	17
4.3 Coding of monitoring networks.....	18
4.3.1 International programmes	18
4.3.2 National networks.....	18
4.4 Institutions responsible for operation	18
4.5 Overview of measurements at the Košetice observatory and adjacent infrastructures	18
4.5.1 Meteorological and climate measurements	18
4.5.2 Solar radiation	19
4.5.3 Air quality.....	19
4.5.4. Precipitation quality.....	21
4.5.5 Surface water	22
4.5.6 Biological monitoring	22
4.5.7 Soil	22
4.5.8 Persistent organic compounds	22
4.5.9 Campaigns (manual)	23
5. LIST OF REFERENCES	25
5.1 References concerning Co-located station.....	25
5.2 Other references	35
6. SELECTED ANALYSIS.....	36
6.1 DESIGN, SCIENTIFIC GOALS AND CHALLENGES OF THE ATMOSPHERIC STATION KŘEŠÍN U PACOVA.....	36
6.1.1 Introduction.....	36
6.1.2 Methods	37
6.1.3 Research activities	41
6.1.4 Conclusions.....	42
6.1.5 Acknowledgement.....	42
6.1.6 References	42
6.2 LONG-TERM TRENDS OF AIR POLLUTION AND PRECIPITATION AT THE KOŠETICE OBSERVATORY	44
6.2.1 Introduction.....	44
6.2.2 Method.....	45
6.2.3 Results	45

6.3 LONG-TERM TRENDS OF SURFACE OZONE IN THE CZECH REPUBLIC.....	50
6.3.1 Introduction.....	50
6.3.2 Trend of mean annual surface ozone concentrations	50
6.3.3 Critical levels.....	53
6.3.4 Conclusions.....	54
6.3.5 References.....	54
6.4 LONG TERM MEASUREMENT OF AEROSOL HYGROSCOPICITY	
AT RURAL BACKGROUND STATION KOŠETICE, CZECH REPUBLIC.....	55
6.4.1 Introduction.....	55
6.4.2 Experimental	55
6.4.3 Results and discussion.....	56
6.4.4 Conclusions.....	58
6.4.5 Acknowledgements	58
6.4.6 References	58
6.5 WATER SOLUBLE IONS AND OC/EC IN PM₁₀ AT KOŠETICE	59
6.5.1 Introduction.....	59
6.5.2 Experimental	59
6.5.3 QA/QC procedures	60
6.5.4 Results	60
6.5.5 Conclusions.....	62
6.5.6 Acknowledgement.....	63
6.5.7 References	63
6.6 COMPARISON OF EC AND OC AEROSOLS IN PM_{2.5} AT THE KOŠETICE OBSERVATORY	
AND AT THE PRAGUE-SUCHDOL BACKGROUND SITES WITH TWO-HOUR TIME RESOLUTION	64
6.6.1 Introduction.....	64
6.6.2 Experimental	64
6.6.3 Results	65
6.6.4 Conclusions.....	67
6.6.5 Acknowledgement.....	68
6.6.6 References	68
6.7 CONTINUOUS AEROSOL NUMBER SIZE DISTRIBUTIONS MEASUREMENT AT KOŠETICE OBSERVATORY	69
6.7.1 Introduction.....	69
6.7.2 Methods	69
6.7.3 Results	70
6.7.4 Acknowledgments	73
6.7.5 References	73
6.8 RADIOCARBON AND GLOBAL SUESS EFFECT CAUSED BY FOSSIL FUEL COMBUSTION	74
6.8.1 Introduction.....	74
6.8.2 Methods	74
6.8.3 Discussion.....	74
6.8.4 Summary	76
6.8.5 Acknowledgments	76
6.8.6 References	76
6.9 EDDY COVARIANCE MEASUREMENT IN AN AGROECOSYSTEM IN KŘEŠÍN U PACOVA	78
6.9.1 Introduction.....	78
6.9.2 Methods	78
6.9.3 Results and discussion.....	80
6.9.4 Conclusions.....	83
6.9.5 Acknowledgement.....	83
6.9.6 References	83
6.10 LONG-TERM HYDROCHEMICAL MONITORING IN THE ANENSKÝ POTOK CATCHMENT	
AS A PART OF THE GEOMON NETWORK.....	85
6.10.1 Introduction.....	85
6.10.2 Methods	85
6.10.3 Results and discussion.....	86
6.10.4 Conclusions.....	89
6.10.5 References	90