

CONTENTS

1. OPENING SESSION

Antonino Zichichi

The International Seminars on Planetary Emergencies and
Associated Meetings 38th Session 3

Jan Szyszko

Combating Climate Change: Land Use and Biodiversity—
Poland's Point of View 5

Yuri A. Izrael

The Role of Stratospheric Aerosols in Antagonizing the
Global Climate Change 13

Mikhail J. Antonovsky

From Monitoring of CO₂ Atmospheric Concentrations
to Monitoring of Global Climatic Change 21

Giuseppe Vatinno

Energy and Environment: A Challenge for the Future 43

André Martin

Acceptance of the Gian-Carlo Wick Gold Medal 49

Antonino Zichichi

Meteorology and Climate: Problems and Expectations 51

2. ENERGY & CLIMATE

FOCUS: MANAGING CLIMATE CHANGE—INTRODUCTION

William A. Sprigg and John S. Perry

Climate, Energy and Planetary Emergency 79

Arthur H. Rosenfeld

Managing Climate Change 81

<i>Arthur H. Rosenfeld</i>	
Plenary Session: Policy and Potential for Energy Efficient Buildings	91
3. ENERGY & CLIMATE	
FOCUS: MANAGING CLIMATE CHANGE—CLIMATOLOGY	
<i>Filippo Giorgi</i>	
Climate Change: Key Conclusions from the IPCC Fourth Assessment Report (IPCC-AR4)	101
<i>Inez Fung</i>	
Positive and Negative Feedbacks—How Well are they Modelled? (Camera-Ready Contribution Not Available)	
<i>Timothy M. Lenton</i>	
Tipping Points or Gradual Climate Change?	103
4. ENERGY & CLIMATE	
FOCUS: MANAGING CLIMATE CHANGE—MITIGATION OF GREENHOUSE GASES	
<i>Peter Bosch</i>	
Climate Change Responses: Mitigation—The IPCC Fourth Assessment Report	117
<i>Igor Bashmakov</i>	
Energy Transitions (Camera-Ready Contribution Not Available)	
<i>Arthur H. Rosenfeld and Patrick McAuliffe</i>	
Opportunities in the Building Sector: Managing Climate Change	127
<i>Carmen D'ifoglio</i>	
Reducing the Growth of Motor Vehicle CO ₂ Emissions through 2050: Efficiency, Low-Emission Fuels and Advanced Technologies	137

<i>Andrea Contin</i>		
BIO-EPOCS Project		155
<i>Arthur H. Rosenfeld and Hashem Akbari</i>		
Cool Urban Surfaces and Global Warming		163
5. ENERGY & CLIMATE		
FOCUS: MANAGING CLIMATE CHANGE—FILLING THE GAP: GEO-ENGINEERING AND ADAPTATION		
<i>Michael C. MacCracken</i>		
Geo-Engineering: A Possible Insurance Policy		175
<i>Ken Caldeira</i>		
Climate Engineering and Planetary Emergencies		187
<i>William Fulkerson and Thomas J. Wilbanks</i>		
Adaptation: A Natural Strategy		191
6. ENERGY & CLIMATE		
FOCUS: MANAGING CLIMATE CHANGE—SUMMARIES & DEBATE		
<i>Richard Garwin</i>		
Summary of Sessions 2 to 5 and Comments		199
7. MISSILE PROLIFERATION AND DEFENSE		
FOCUS: U.S. MISSILE DEFENSE SHIELD		
<i>Richard Wilson</i>		
The 2007 Bush-Putin Disagreement—Some Background on Anti Ballistic Missile Defense		209
<i>Richard L. Garwin</i>		
Ballistic Missile Defense Deployment to Poland and the Czech Republic		213

**8. CLIMATE
FOCUS: THEORETICAL ALTERNATIVES TO
CLIMATE MODELING**

Christopher Essex

Theoretical Alternatives to Climate Modelling:
Introductory Remarks 223

Graeme L. Stephens

Model Limitations 225

Garth W. Paltridge

Scientific Questions behind the Arguments Concerning
the Robustness of Climate Models 237

Anastasios A. Tsonis

A New Dynamical Mechanism for Major Climate Shifts 243

**9. GLOBAL MONITORING OF THE PLANET
FOCUS: THE NORTH POLE AND LIFE CYCLE
NUCLEAR ENERGY ENVIRONMENTAL ISSUES**

Arthur Nikolayevich Chilingarov

Opening Remarks 251

Frank L. Parker

Understanding Energy Production Environmental Externalities
A Literature Review from an Engineering Perspective 253

James L. Conca

Nuclear Energy and Radioactive Waste Disposal in the
Age of Recycling 271

**10. BRAIN DISEASES
FOCUS: THE CRISIS OF LOSING MINDS THE EPIDEMIC
OF ALZHEIMER'S DISEASE IN THE 21ST CENTURY**

Bernardino Ghetti

How the Brain Changes in Alzheimer's Disease 283

<i>Steven T. DeKosky</i>	
Treatment and Prevention of Alzheimer's Disease: Translating Basic Research Findings	305
<i>Charles DeCarli</i>	
Biological Evidence for an Interaction between AD and CVD: Overview and 3 Hypotheses	321
<i>Mary Ganguli</i>	
The Role of Epidemiology in Understanding Alzheimer's Disease: The Meaning of "Risk"	341
<i>John Hardy</i>	
Alzheimer's Disease: Genetics to Pathogenesis	355
11. MEDICINE AND INFECTIOUS DISEASES	
FOCUS: INFECTIOUS AGENTS AND CANCER	
<i>Guy de Thé</i>	
Introductory Remarks	367
<i>Franco M. Buonaguro</i>	
Introducing Infectious Agents and Cancer Session	369
<i>Robert Newton</i>	
Epidemiological Aspects: Worldwide Burden Size	371
<i>John L. Ziegler</i>	
Infectious Agents and Cancer: Pathogenesis	383
<i>Massimo Locati</i>	
Molecular Links between Inflammation and Cancer	393
<i>Marc Girard</i>	
Cancer Vaccines	397
<i>Jacques-François Martin</i>	
Developing Countries Intervention Programs (Camera-Ready Contribution Not Available)	

12. WFS GENERAL MEETING PMP REPORTS—DEBATE AND CONCLUSION

<i>Henning Wegener</i>	
Permanent Monitoring Panel Report on Information Security	405
<i>Lorne Everett</i>	
Permanent Monitoring Panel on Pollution	409
<i>Geraldo G. Serra</i>	
Permanent Monitoring Panel on Limits of Development	417
<i>Guy de Thé</i>	
AIDS and Infectious Diseases PMP	419
<i>Arthur H. Rosenfeld</i>	
Recommendation to Governments from the Permanent Monitoring Panel on Energy	423
<i>William A. Sprigg</i>	
Permanent Monitoring Panel on Climate and Greenhouse Gases	425
<i>Nathalie Charpak</i>	
Mother and Child Permanent Monitoring Panel 2006–2007 Activities	429
<i>Ahmad Kamal</i>	
Permanent Monitoring Panel on Terrorism	441
13. BRAIN AND BEHAVIOR WORKSHOP	
Workshop Agenda	446
Workshop Participants	447
14. ENERGY-CLIMATE WORKSHOP	
Recommendations	451

Workshop Participants	455
15. INFECTIOUS DISEASES WORKSHOP	
Workshop Agenda	458
Workshop Participants	459
16. CLIMATE MODELLING WORKSHOP	
Workshop Agenda	462
Report on the Workshop	
Theoretical Alternatives to Climate Modelling	463
Workshop Participants	478
17. INFORMATION SECURITY WORKSHOP	
<i>William A. Barletta</i>	
Cyberwar or Cyber-Terrorism: The Attack on Estonia	481
<i>Udo Helmbrecht</i>	
The Situation of IT-Security—A German Perspective	487
<i>Vladimir Britkov and Axel Lehmann</i>	
Security Challenges Arising from Innovations in Information and Communication Technologies (ICT)	503
Workshop Participants	516
18. LIMITS OF DEVELOPMENT WORKSHOP	
Workshop Agenda	518
<i>Jesse D. Saginor and Christopher D. Ellis</i>	
Limitations of Development: Climate Change and the Impact of Rising Sea Levels on Cities in the United States	519

<i>Geraldo G. Serra</i> Dealing with Climate Change: The Brazilian Case	533
<i>Hiltmar Schubert</i> Climate Change—Consequences for Europe	539
<i>Mbareck Diop</i> Regional Impacts of Climate Change and Variability on West and Central African Region	545
<i>Juan M. Borthagaray</i> Impact of Global Climate Change over the Territory of Argentina	555
Workshop Participants	566
19. SEMINAR PARTICIPANTS	
Seminar Participants	569