



INTERGOVERNMENTAL PANEL
ON CLIMATE CHANGE

WG-I: 9th/Doc. 3
Item 2
(24.IX.2003)
ENGLISH ONLY

IPCC WORKING GROUP I - 9th SESSION
Vienna, 4 November 2003

**PROPOSED CHAPTER OUTLINE OF THE WORKING GROUP I CONTRIBUTION
TO THE IPCC FOURTH ASSESSMENT REPORT (AR4)**

(Submitted by the Co-chairs of Working Group I)

Working Group I Contribution to the IPCC Fourth Assessment Report Climate Change 2007: The Physical Science Basis

Summary for Policymakers

Technical Summary

1. Historical Overview of Climate Change Science

Executive Summary

- Introduction
- Progress in Observations
- Progress in Understanding of Radiative Forcing, Processes, and Coupling
- Progress in Climate Modelling
- Advances in Understanding Uncertainties

Appendix: Glossary of Terms

2. Changes in Atmospheric Constituents and in Radiative Forcing

Executive Summary

- Introduction
- Definition and Utility of Radiative Forcing
- Recent Changes in Greenhouse Gases
- Aerosols – Direct and Indirect Radiative Forcing
- Radiative Forcing due to Land Use Changes
- Contrails and Aircraft-Induced Cirrus
- Variability in Solar and Volcanic Radiative Forcing
- Synthesis of Radiative Forcing Factors
- GWPs and Other Metrics for Comparing Different Emissions

Appendix: Techniques, Error Estimation, and Measurement Systems

3. Observations: Atmospheric and Surface Climate Change

Executive Summary

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- Changes in Atmospheric Circulation

- Patterns of Variability
- Changes in the Tropics and Sub-Tropics
- Extra-Tropical Changes
- Changes in Extreme Events
- Synthesis: Consistency across Observations

Appendix: Techniques, Error Estimation, and Measurement Systems

4. Observations: Changes in Snow, Ice and Frozen Ground

Executive Summary

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- Changes in Snow Cover and Albedo
- Sea Ice Extent and Thickness Changes
- Changes in Glaciers and Small Ice Caps
- Changes and Stability of Ice Shelves
- Changes and Stability of Ice Sheets
- Changes in Frozen Ground

Appendix: Techniques, Error Estimation, and Measurement Systems

5. Observations: Oceanic Climate Change and Sea Level

Executive Summary

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- Biogeochemical Tracers
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Appendix: Techniques, Error Estimation, and Measurement Systems

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- Inferred Past Climate System Change
- Abrupt Climate Change
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- Aerosols and Climate Change
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- Evaluation of Contemporary Mean Climate as Simulated by Coupled Global Models
- Evaluation of Large Scale Climate Variability as Simulated by Coupled Global Models
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9. Understanding and Attributing Climate Change

Executive Summary

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- Predictions of the Climate System and their Reliability
- Understanding Pre-Industrial Climate Change
- Understanding Climate Change During the Instrumental Era

Appendix: Methods used to assess predictability

Appendix: Methods used to detect externally forced signals (detection/attribution)

Appendix: Methods used to assess uncertainty

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Executive Summary

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- Scenarios and Simple Models
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11. Regional Climate Projections

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- Alternative Simple Methods
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