METADATA

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Abstract

This electronic textbook is addressed to undergraduate students of Geography or related to Physical Geography departments. It is an introductory text in the fields of atmospheric sciences, applied climatology and climate change, providing basic knowledge of the analysis of atmospheric and climate processes at various spatio-temporal scales. Emphasis is placed on understanding the concept of climate change, as well as on the analysis of climate scenarios and reset policies. Exercises at theoretical and laboratory level, which are accompanied by a variety of meteorological and climate metadata, constitute an important thematic section. In addition, students are informed about weather forecasting issues in combination with practical exercises from the daily forecast freely provided by the website http://meteoclima.hua.gr The book includes the following thematic sections: Basic characteristics of the Earth system - Principles of atmospheric thermodynamics - Atmospheric kinematics - Air masses and frontal surfaces - Radiation in the atmosphere - Spatio-temporal scales of atmospheric motions - Weather systems and forecasting - The global climate system - The natural and enhanced greenhouse effect - Climate scenarios - Major climate phenomena - Dust transport of natural origin and its role as a climate driver.

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