

METADATA

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Abstract

The book is aimed at undergraduate and postgraduate students of Agricultural or Polytechnic Schools, or environmental, or geosciences, and/or natural sciences, as well as researchers and professionals in the above scientific fields, but also in the fields of the agricultural environment more broadly and ecosystems. It attempts a contemporary, interdisciplinary, multi-level, multi-scale, and up-to-date approach to agrometeorology, which has undergone significant scientific and technological development over time and is of increasing importance. It is structured in six parts (sections) as follows. Part 1 (Introduction) includes Chapters 1 and 2, which describe and analyze, respectively, the subject and basic concepts of agrometeorology and basic meteorology for agriculture. Part 2 (Agrometeorological Analysis) includes Chapters 3, 4, and 5, which analyze the range of meteorological variables and parameters, mainly in the boundary layer, that make up modern agrometeorological analysis. In particular, Chapter 3 examines solar radiation, the laws that govern it, the energy balance, and heat exchanges in the boundary layer of the atmosphere, where living organisms develop, which are the main subject of agrometeorology. Chapter

4 analyzes precipitation and evapotranspiration. Chapter 5 describes the biological effects of weather and climate on living organisms, plants, and animals. First, biometeorological and bioclimatic indicators and parameters are presented, followed by an analysis of aerobiology, i.e., the transport of organisms and biologically important materials through the atmosphere. Part 3 (Agrometeorology for agriculture) comprises Chapters 6, 7, and 8, which analyze, respectively the processes and relationships between agrometeorology and plant production, terrestrial and aquatic animal production, as well as the enemies and diseases of living organisms. Part 4 (Climate and agriculture) includes Chapters 9 and 10, which refer, respectively, to climatology from an agricultural perspective, as well as to the updated approach to climate variability and change in agriculture in terms of impact, response, and adaptation. Part 5 (Agrometeorological simulation and systems) includes Chapters 11, 12, 13, and 14, which, based on Parts 2 and 3, present and explain updated simulation procedures and methodologies, as well as systems applied in agrometeorology. Specifically, Chapter 11 covers agro-meteorological remote sensing, Chapter 12 prese • •









