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Sommario/riassunto

This volume is devoted to the derivation and application of simplified bioclimatic boundary conditions at vegetated land surfaces using natural selection of vegetation characteristics driven by productivity maximization. It investigates the internal control of forest growth by the vertical fluxes of light, CO2, water vapor, and heat within the canopy, as well as the external control offered by the balances of thermal energy and water. Through these means it seeks to determine how the physical characteristics and productivity of forest communities are related to the climates and soils in which they are found. Ecohydrology bridges the fields of hydrology and ecology and proposes new unifying principles derived from the concept of natural selection. It also has potential application in determining the response of vegetation to slow variations in climate and will provide fascinating reading for graduate-level students and research scientists working in ecohydrology, hydroclimatology, forest ecology, and surface water hydrology.