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Nota di contenuto	Entropy Production by Earth System Processes -- Non-Equilibrium Thermodynamics in an Energy-Rich Universe -- Stumbling Into the MEP Racket: An Historical Perspective -- Maximum Entropy Production and Non-Equilibrium Statistical Mechanics -- Using Ecology to Quantify Organization in Fluid Flows -- Cosmological and Biological Reproducibility: Limits on the Maximum Entropy Production Principle -- Entropy Production in Turbulent Mixing -- Entropy Production of

Atmospheric Heat Transport -- Water Vapor and Entropy Production in the Earth's Atmosphere -- Thermodynamics of the Ocean Circulation: A Global Perspective on the Ocean System and Living Systems -- Entropy and the Shaping of the Landscape by Water -- Entropy Production in the Planetary Context -- The Free-Energy Transduction and Entropy Production in Initial Photosynthetic Reactions -- Biotic Entropy Production and Global Atmosphere-Biosphere Interactions -- Coupled Evolution of Earth's Atmosphere and Biosphere -- Temperature, Biogenesis and Biospheric Self-Organization -- Entropy and Gaia: Is there a Link Between MEP and Self-Regulation in the Climate System?- Insights from Thermodynamics for the Analysis of Economic Processes.

Sommario/riassunto

The present volume studies the application of concepts from non-equilibrium thermodynamics to a variety of research topics. Emphasis is on the Maximum Entropy Production (MEP) principle and applications to Geosphere-Biosphere couplings. Written by leading researchers form a wide range of background, the book proposed to give a first coherent account of an emerging field at the interface of thermodynamics, geophysics and life sciences.