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| Nota di contenuto | Front matter -- 1. Introduction -- Part One: The notion of metaphor and its relation to the discourse of physics -- 2. Approaches to metaphor: past and present -- 3. Identifying metaphor in physical science: sorts, functions, and related concepts -- Part Two: Metaphors in physics -- 4. Underlying metaphors of everyday thought in meta-theory and the concept formation of physics -- 5. World theories in meta-theory and the concept formation -- 6. Stipulative reference extension -- 7. Assimilative metaphor -- 8. Theory-constitutive and educational metaphors -- 9. Metaphor and style: "figures of speech" in the language of physics -- 10. Transfer of denotations in the terminology of physics -- 11. Thoughts and conclusions -- References |
| Sommario/riassunto | With reference to copious case studies, this book attempts to give a broad and comprehensive view of the multiplicity of forms taken by metaphor in physics. A diachronic presentation of the views hitherto advanced on the role of metaphor in the natural sciences provides an introduction to the crucial issues. By means of a broad definition of metaphor as a lexical, semantic, and conceptual phenomenon, metaphor is identified at various levels of physics discourse: in metatheory and methodology; in the sociology of the origin and evolution of science; in theory and conceptualization, including physics models; in education; and finally in linguistic expression, including terminology. Whereas historians and theoreticians of science reduce |

the question of metaphor in physics to the question of the role of scientific models, where one area of physics provides concepts and structures for another area, the perspective adopted here is that of cognitive semantics. The study inquires into the way in which concept-formation and terminology in physics avails itself of the metaphoric bent immanent in everyday language, conceptualizing abstract ideas in spatial terms, inanimate things as intelligent, measurable phenomena in terms of the visual. Attention is also given to the way in which metaphoric processes make it possible to integrate new knowledge into old and sometimes obsolete structures rather than eliminating those structures altogether.
