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Autore	Gail Hans-Peter <1941->
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Sommario/riassunto

Circumstellar dust, the astronomical dust that forms around a star, provides today's researchers with important clues for understanding how the Universe has evolved. This volume examines the structure, dynamics and observable consequences of the dust clouds surrounding highly evolved stars on the Giant Branch. Early chapters cover the physical and chemical basis of the formation of dust shells, the outflow of matter, and condensation processes, while offering detailed descriptions of techniques for calculating dust formation and growth. Later chapters showcase a wide range of modeling strategies, including chemical and radiative transfer and dust-induced non-linear dynamics, as well as the latest data obtained from AGB stars and other giants. This volume introduces graduate students and researchers to the theoretical description for modeling the dusty outflows from cool stars and provides a full understanding of the processes involved.