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Nota di contenuto	Introduction: Radio and IR studies of molecular clouds -- The evolution of molecular clouds -- Interstellar chemistry in the last two decades -- Hunting oxygen in the interstellar medium -- Interstellar CNO isotope Ratios -- Angular structure and motions of interstellar masers -- Interpretations for observations of astronomical masers -- Molecular excitation and galactic interstellar clouds -- High resolution studies of molecular clouds -- Dense molecular gas in star-forming regions — The importance of submillimeter observations -- Conditions in regions of high mass star formation -- H2O masers and star formation -- Where is the heavy molecule heimat in Sgr B2? -- The relation between OB stars, H II regions & molecular clouds -- From cores to stars -- Surveying giant molecular clouds for low mass stars: NIR imaging of the DR22 and S184 regions -- The search for protostars — with dust emission as a tracer -- Molecular emission from disks around young stars -- Late type stars associated with maser emission -- Mapping the

molecular emission of circumstellar envelopes with the Plateau de Bure interferometer -- High resolution studies of SiO masers -- Intergalactic cloud and protogalaxy? An unusual molecular complex -- Dense gas in galactic nuclei -- CO at high redshifts.

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Sommario/riassunto

This book contains the proceedings of a workshop held in Schloß Ringberg to assess developments in molecular cloud research over the last 25 years, and to discuss trends for future research in the field of molecular line astronomy. The topics include the morphology, formation, and lifetimes of molecular clouds, and their relation to star formation. Also, the chemical and isotopic content of these clouds is reviewed, and comparisons with molecular clouds in external galaxies are made. This rather complete survey of this important field of research addresses researchers in astronomy and students alike.

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