

1. Record Nr.	UNISA996466721803316
Titolo	Astrophysical masers : proceedings of a conference held in Arlington, Virginia, USA ; 9-11 March 1992 // edited by Andrew W. Clegg, Gerald E. Nedoluha
Pubbl/distr/stampa	Berlin, Germany : , : Springer, , [1993] ©1993
ISBN	3-540-47536-2
Edizione	[1st ed. 1993.]
Descrizione fisica	1 online resource (XX, 480 p. 38 illus.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 412
Disciplina	523.018
Soggetti	Masers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	The early years of research on astronomical masers -- On the theory of natural masers -- Line profiles in masers: Velocity relaxation -- OH maser polarization -- Coherence and incoherence in astronomical masers -- A model for polarized OH masers -- Submillimeter water masers -- Linear and circular polarization for masers with weak zeeman splittings -- Radiative transfer in three dimensional masers -- A special database for gas-phase compounds studied by microwave spectroscopy and radio astronomy -- Classification and statistical properties of H ₂ O masers -- Observations of new submillimeter maser lines of water and methanol -- The CRL 34-m radio telescope at Kashima — A new strong tool in maser research — and the first results of a 22 GHz H ₂ O maser survey -- Molecular megamasers after ten years -- VLBI observations of the water vapor megamaser in IC10 -- Extragalactic H ₂ O masers -- H ₂ O megamaser variability -- Interstellar masers: Then and now -- Some interesting OH/H ₂ O masers -- High resolution centimeter radio continuum and ammonia maser observations of the W51 region of star formation -- Masers in star-forming regions associated with cold, bright IRAS sources -- CH in translucent molecular clouds -- Ammonia masers in the interstellar medium -- OH masers in star-forming regions: Interpretation of observations -- Excited OH 4.7 GHz masers associated with IRAS far-infrared sources -- The magnetic field of the Milky Way: OH maser

Zeeman results -- OH masers and bipolar molecular outflows associated with massive star formation -- H₂O maser survey of IRAS sources at high galactic latitude -- Water masers associated with compact molecular clouds and ultracompact HII regions: The extended sample -- Molecular outflows and H₂O masers: What type of connection? -- A shock origin for interstellar H₂O masers -- Water maser emission toward ultracompact HII regions -- Interacting H₂O masers in star-forming regions -- Origin of water masers in W49N -- VLBI observations of the H₂O supermaser outburst in the orion nebula -- The Zeeman effect or linear birefringence? — VLA polarimetric spectral line observations of H₂O masers -- The Arcetri methanol VLBI receiver -- A study of methanol masers at 36 and 44 GHz and 48 GHz thermal emission around them -- Methanol masers in the southern Galaxy -- Interstellar methanol masers -- Synthesis images of 6.7-GHz methanol masers -- Production of 12.2 GHz CH₃OH masers — Preliminary results of an excitation study -- Interferometric observations of 95 GHz methanol masers -- On the classification and list of transitions of methanol masers -- Physical and evolutionary status of G1.6–0.025 giant molecular cloud as revealed by 4?1-30E methanol weak maser -- The proper motions of the H₂O masers near W3(OH) -- Kinematic studies of ultracompact HII region/molecular cloud interfaces -- Space VLBI and the masers -- Preliminary results from a study of the proper motion of water vapor masers in cepheus A -- High- and low-velocity maser features -- Proper motions of OH masers in W75N -- Proper motion studies of H₂O masers -- Interstellar scattering of maser radiation -- A VLBI survey of interstellar broadening of galactic OH masers -- Angular wander measurements of maser clusters -- The polarized water maser source in orion -- Variations of optical and water maser emission from long period variables -- An H₂O flare in W49N -- Time-variable OH emission from S269 -- Variations in polarization of IRAS 19566+3423 at the 1612 MHz OH line from 1987 to 1992 -- Theory of fluctuations in unsaturated masers -- Long-term observations of outbursts and variability of the W49N water masers -- Water maser and optical variability for V778 CYG and EU and 1987–1991 -- Search for rapid variations in OH and H₂O masers -- Water maser bursts in W49M (1989–92) -- Radiative instabilities in astrophysical masers -- A monitoring program of interstellar OH and H₂O masers -- Water maser monitoring of IRAS 16293-2422 -- Recent studies of circumstellar masers -- Observations of maser RRLs from the star MWC 349A -- The color mimics of OH / IR stars -- The masers of GY Aql -- OH/IR stars and the Galactic Centre distance -- OH maser emission from F- and G-type supergiant stars -- OH masers in the circumstellar shell of the G1a supergiant AFGL 2343 -- Circumstellar OH masers -- Pumping of main line masers in type I Miras -- Unusual OH radio emission in Mira (o CET) -- VLBI spectral line polarization observations of the OH masers in the supergiant IRC+10420 -- To mase or not to mase? Polarimetry of OH/IR stars -- Evidence for competitive gain in OH transitions observed in circumstellar shells -- Distance measurements of OH-IR sources -- Further evidence for the photoproduction mechanism of the OH maser formation -- Monte Carlo models of 1612 MHz OH masers in circumstellar shells -- Properties of OH/IR stars in the galactic centre -- The excitation of vibrationally excited H₂O masers -- The 22 GHz water maser of RX Bootis -- The water maser properties of the arecibo sample of OH/IR stars -- The evolution of water maser spectra in M type stars -- Circumstellar water masers -- Recent wort: On SiO masers at the Centro Astronómico de Yebes -- SiO masers in VY CMa : Detection of maser emission in the v=4 state -- Recent VLBI

observations of SiO masers -- 86 GHz survey of IRAS point sources: 156 SiO, $v=1$, $J=2\rightarrow 1$ maser sources -- Modeling SiO maser emission from late-type stars -- The results of knife (Japanese MM-VLBI) on SiO masers -- SiO maser emission and the intrinsic properties of MIRA variables -- Molecular catastrophes and circumstellar SiO masers -- Natural lasers and masers in the solar system -- The OH radio emission of comet Levy 1990 XX -- Astrophysical masers from a historical perspective.

Sommario/riassunto

In this volume the full range of astrophysical maser research is covered, with contributions from many of the foremost researchers in the field. The topics include masers in star-forming, circumstellar and extragalactic environments, solar system masers, newly discovered masing transitions, variability, proper-motion studies, and theory. Since this was the first ever conference devoted exclusively to astrophysical masers, these proceedings provide a reference for this field which has not previously been available. "Astrophysical Masers" will be useful both to those who wish to study the physics of masers, and to those who wish to better understand the astrophysically important regions with which they are associated.
