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Nota di contenuto	New experimental approaches in nuclear astrophysics -- Direct cross section measurements towards thermal energies -- A new ?-ray detector for studies of capture reactions involving radioactive nuclei -- Coulomb dissociation as a source of information on radiative capture processes of astrophysical interest -- New experimental results for nuclear reactions in explosive hydrogen burning -- Beta-decay half-lives of very neutron-rich nuclei and their consequences for the astrophysical r-process -- Experimental studies of thermal effects during s-process nucleosynthesis -- Thermonuclear reactions at high temperatures and densities -- Thermonuclear functions -- A microscopic approach to reactions of astrophysical interest -- The

ETFSI approach to the nuclear mass formula -- Nuclear-matter compressibility from low-energy nuclear physics -- Early nucleosynthesis, chemical evolution of galaxies and particle physics -- Chemodynamical models of galactic evolution -- Abundance patterns in some old stars -- Evolution of Wolf-Rayet Stars -- Advanced phases and nucleosynthesis in very massive stars -- Overshooting and electron-positron pair instability -- S - process production in the central helium burning of large masses (M ? 15 M?) -- On the synthesis of the proton-rich nuclei -- Studies of non-local and time-dependent convection -- Nucleosynthesis in explosions of high metallicity supermassive objects -- Isotopic anomalies and wolf-rayet stars -- The 26Al ?-ray line: A status report -- A possible relationship between extinct 26 Al and 53 Mn in meteorites and early solar activity -- The contamination of cometary globules by the ejecta of nearby massive stars -- Binary systems as supernova progenitors (some frequency estimates) -- On stellar models for the progenitor of Supernova 1987A -- A few comments on the evolutionary history of SN 1987a before explosion -- Model calculations for scattering dominated atmospheres and the use of supernovae as distance indicators -- Synthetic spectra for supernovae II -- Monte carlo methods for neutrino transport in type-II supernovae -- Neutrinos from sn 1987a: Remarks on possible interpretations.

Sommario/riassunto

The recent discovery of a type II supernova in the Large Magellanic Cloud provides a rare chance to compare models of stellar evolution and nucleosynthesis directly with observations. This workshop covers thermonuclear reaction rates in chaos (experimental and theoretical), stellar evolution, nucleosynthesis and isotopic anomalies in meteorites and, in a final section, the supernovae, in particular SN 1987A. It brings the most interesting news in the rapidly developing field of nuclear astrophysics to researchers and also to graduate students. Recent and future developments are discussed. Special emphasis is placed on experimental and theoretical approaches to obtaining nuclear reaction rates, models of stellar evolution and explosions, and theories of nucleosynthesis. Various aspects of stellar evolution, nucleosynthesis, and thermonuclear reactions of astrophysical interest are reviewed. Several contributions deal with supernova explosions of massive stars, and in particular with Supernova 1987A and its impact on current models of the evolution of massive stars, the gravitational collapse of stellar cores, and neutrino physics and astronomy.