

**DYNAMICS OF GALAXIES AND
THEIR MOLECULAR CLOUD DISTRIBUTIONS**

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This volume contains the proceedings of the IAU Symposium, 'Dynamics of Galaxies and Their Molecular Cloud Distributions', held in Paris, June 4–9, 1990. The symposium was attended by 190 astronomers and astrophysicists from 24 countries. The topics covered include surveys of Local Group Galaxies, search of molecules in early-type galaxies, spiral structure in molecular clouds and density waves in gaseous disks, a comparison with other gaseous components and infrared emission, interacting galaxies and starbursts, gas and star dynamics, galaxy evolution, IRAS ultraluminous objects and quasars.

Surveys of the Magellanic Clouds and of M31 in molecular gas are presented, the detection of CO in more than 50 ellipticals and lenticulars, spiral structure in M51 and nearby-galaxies down to 2'' resolution, molecular bars and rings in the center of galaxies. Simulations of interacting and merging galaxies including self-gravitating stars and gas reveal how transient the observed density waves and galaxy morphologies are, that were believed to be stationary. Remote objects, up to $z = 0.15$, are reported to have huge amounts of molecules concentrated in their nuclei, most probably due to a violent merging event.

The cover picture shows the CO(2-1) contours superimposed on the spiral arms of NGC 6946 in the red light, as described by Viallefond (page 167).