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Nota di contenuto	- Iriomote Island, Japan -- Observational method -- Numerical simulation method -- Dynamical properties of coastal currents in the northwestern part of Iriomote Island Part 1 - Sakiyama and Amitori bays -- Dynamical properties of coastal currents in the northwestern part of Iriomote Island Part 2 - Funauki and Shirahama bays -- Sediment monitoring in Sakiyama and Amitori bays -- Transport properties of soil particles in Sakiyama and Amitori bays -- Underwater three dimensional measurements -- Coral distributions and physical environments in Amitori Bay -- Coral distributions and physical environments in Sakiyama Bay -- Estimation technique for horizontal distribution of coral -- Distribution of Enhalus acoroides according to

waves and currents -- Numerical analysis of initial dynamic state of bundle of Acroporidae spawning in Amitori Bay -- Numerical analysis of dispersals of Enhalus acoroides seeds and fruits in the northwest sea area of Iriomote Island -- Coral recruitment on a local scale in Amitori Bay, Iriomote Island, estimated by filed surveys and numerical analyses -- Numerical analysis of dynamic state of Coenobita brevimanus‘s larvae in Amitori Bay.

Sommario/riassunto

This book presents recent results of collaborative studies in geophysics and ecology, focusing on the relationship between the physical environment and the distribution of the marine coastal ecosystems. The study area, the Sakiyamawan–Amitoriwan nature conservation area in Iriomote Island of Japan, is the only oceanic nature conservation area in the country. The area has no access roads, and the bay perimeter is uninhabited; therefore, it preserves the natural environment with very little human impact. In addition, it has various environmental gradients such as topography and inflows from rivers with mangrove forests which affect the distribution of marine coastal ecosystems such as those containing reef-building corals, sea grasses, and hermit crabs. For these reasons, the area is one of the best places for the study of the relationship between the physical environment and the distribution of the marine coastal ecosystems, a relationship that is important for their conservation but has not been investigated fully. This book is aimed at students and researchers in the fields of oceanography and marine coastal ecology as well as general readers who are interested in coral reefs, diving, and nature conservation.