



Growth and destruction of volcanic islands: a review of 40 years of exploration of the submarine flanks of La Réunion Island volcanoes, Indian Ocean

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Much of the geological history of volcanic islands is recorded in formations below sea level. Our knowledge of the submarine flanks of ocean volcanoes is often limited, if not totally lacking.

The shield volcanoes building La Reunion Island are set on an oceanic crust located at a depth of more than 4000 m. Since the early 1980s, several oceanographic cruises have gradually revealed the geological nature of the submarine flanks of the volcanoes of La Reunion Island.

The processes involved are numerous, from construction by volcanism to a wide range of gravitational processes. We will detail this diversity, emphasizing the relative importance and frequency of these various forms of construction of the submarine part of a volcanic island that is more than 9 km high. The remarkable spreading of La Reunion Island edifice on the oceanic crust results mainly from these gravitational processes and, in fine, relatively little from the contribution of purely volcanic processes.