

French Extended Continental Shelf Mapping: example of new continental margin understanding offshore French Guiana

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Under the United Nations Convention on the Law of the Sea, Coastal States can extend sovereign rights over the natural resources of the Continental Shelf beyond 200 nautical miles (M) if they can demonstrate that their continental margin extends beyond this distance from the coast. Article 76 of the Convention defines the continental shelf and includes geomorphological and geological criteria to claim such a shelf beyond 200 M. Since 2006, France has filed 7 submissions for a total of 10 distinct geographic regions to the Commission on the Limits of the Continental Shelf that was established by the Convention to examine those claims, and make recommendations with respect to the justification of the outer limits of the continental shelf. To support the French submissions, a significant effort was employed in acquiring new marine geophysical and geological data and compiling existing data along the deep water parts of the continental margins offshore all the French overseas territories. In this presentation, we will discuss the example of French Guiana, where the data collected for the purpose of fulfilling the obligation under the Convention to submit data and information to the Commission within a 10 year time frame have led to new understanding of the transform continental margin and the Demerara Plateau located to the north of French Guiana and Surinam. In addition, the data collected for this purpose have led to new scientific questions and have encouraged new and enhanced scientific collaboration between French government organizations and the academic community. Follow up research and scientific cruises that will be presented in separate communications have addressed sedimentary processes including contourites, giant comet tail like depressions probably associated with the strong bottom currents observed along the continental slope and potentially related to pockmarks, as well as giant submarine landslides. Most recently, multichannel reflection and wide angle refraction methods were deployed to study the deep structure of the Demerara plateau, a submarine plateau that is similar to other plateaus found along many transform continental margins.