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## Conjunction between diachronic volcanic processes and transform margin leads to the unusual structure of the Demerara transform marginal plateau and its three different margins.

Thomas Museur<sup>1,2</sup>, **David Graindorge**<sup>2</sup>, Frauke Klingelhoefer<sup>1</sup>, Walter Roest<sup>1</sup>, Christophe Basile<sup>3</sup>, Lies Loncke<sup>4</sup>, and François Sapin<sup>5</sup>

<sup>1</sup>IFREMER, GM, France (thomas.museur@ifremer.fr)

<sup>2</sup>IUEM, Plouzané, France

<sup>3</sup>Université Grenoble Alpes, France

<sup>4</sup>Université de Perpignan Via Domitia, France

<sup>5</sup>Total, Pau, France

The Demerara plateau (offshore Suriname and French Guiana) is an original transform marginal plateau located at the junction between the central and the equatorial Atlantic domains. New results combining the interpretation of several datasets of high-penetration industrial MCS, academic MCS and wide-angle seismic data image a 30 km thick crust in the plateau, evolving towards three different margins to the two adjacent oceanic domains.

This work shows that this oceanic relief is a Jurassic volcanic margin located at the southern termination of the Central Atlantic rifting, and forming the divergent western margin of the Demerara plateau. New result from dredges also show the influence of a hotspot in this rifting phase. The resulting transitional domain is unusual, characterized by a progressive thinning of the margin toward the west and the presence of SDRs outer bodies on a reworked unit probably of continental origin. Unambiguous oceanic crust is identified at about 100 km from the slope break of the shelf. Toward the plateau, the outer SDR body let place to several thick superimposed inner SDR.

Then, this Jurassic domain was remarkably reworked during the Cretaceous rifting phase linked to the opening of the Equatorial Atlantic. This second event restructured this volcanic object, forming a transform northern margin and a divergent eastern margin, each with a specific transitional domain.

The presence of a volcanic margin which subsequently undergoes a non-coaxial opening with transform constraints is relatively unusual. Our data help to better constrain the transitional domains and the TOC of the Equatorial Atlantic Cretaceous margins.

The characterization of the northern and eastern extension limit of the SDRs formations and of the high velocity lower crust observed in the plateau is an important regional issue. This knowledge is necessary in particular to characterize the volumes and structures associated with

the Jurassic volcanic episode, which control the thermo-structural Cretaceous evolution of the plateau and the adjacent domains.