MARINE MAGNETIC MAPPING OFFSHORE DECEPTION ISLAND: A TWO DECADE PERSPECTIVE

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Deception Island forms the emergent part of a young active shield volcano (less than 1 Ma). It lies in the south-western part of Bransfield Strait between the Antarctic Peninsula and the South Shetland archipelago. This volcanic island has been very active during its entire evolution and its possible to distinguish different episodes of volcanic activity. Particularly, its last eruptions took place in 1967, 1969 and 1970. Its last active episode took place during the 1998-1999 Antarctic summer, when the pattern of seismic activity at Deception Island volcano changed significantly. A magmatic injection in depth is widely consider as the most probable hypothesis that explains the generation of this last seismic crisis. First magnetic surveys at Deception Island surroundings kicked-off during late 80's of the past century. Particularly, in 1988 was carried out the first magnetic survey ever performed of Port Foster (Deception volcano inner's bay). These studies continued during the period which goes from 1988 to 1991. In December 1999, January-February 2002, and December 2008, the Royal Naval Observatory of the Spanish Navy performed additional geophysical campaigns where new marine magnetic data were always recorded. In fact, Deception inner's bay was surveyed again in December 1999, and December 2008. Nowadays all this information provide us the chance of analysing the volcano and its evolution from different perspectives: a) The study and comparation of these three magnetic anomaly pictures of Deception island's inner bay (1988, 1999 and 2008). b) The study of its offshore magnetic anomalies. In this comunication we will present and discuss all these results.

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