

# **RELATIONSHIPS BETWEEN MAGMA INTRUSION AND MIOCENE VOLCANIC COMPLEXES COLLAPSES IN FUERTEVENTURA (CANARY ISLANDS) USING ANALOGUE MODELS.**

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The possibility to directly observe the magmatic chambers that fed the Miocene volcanic complexes makes Fuerteventura one of the most singular islands of the Canary archipelago. Although there are some studies dealing with the growth and collapse history of the Fuerteventura volcanoes there is yet no study trying to link the emplacement and growth of the feeding magma chambers (shallow plutons) to the possible influence they may have had in the development of volcano collapses in the island. About 30 analogue models have been designed to study, possible effects of shallow pluton emplacement in the evolution of the Fuerteventura Miocene volcanic complexes. Preliminary results of analogue models reveal that this process induces deformation on the surface volcanoes and could be responsible for lateral flank collapses. However, it should be noted that these analogue models are oversimplified because, among other caveats, they are only able to reproduce one time period and they are difficult to implement using many variables at the same time because there is the possibility to lose the reference scaling. Therefore, a combination of several magmatic intrusion events and other factors which can also promote flank instability, such as hydrothermal activity, are proposed as the triggers of the collapses at least of the Central Miocene volcanic complex in Fuerteventura. In addition, a relatively long erosional period - from late Miocene to Pliocene times - in the island would have also contributed to the dismantling of the Miocene volcanic complexes and related exposure of the magma chambers.