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Will Teide erupt again?

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The quantification of hazard in volcanic systems characterised by long repose period is difficult because the lack of knowledge of the past volcanic history and also because in many cases volcanism is not perceived as a potential problem, being only regarded as an attraction for tourism or a source of economic benefit, thus hiding the need to conduct hazard assessment. Teide, in the island of Tenerife (Canary Islands), is not an exception to this general rule and, despite being one of the largest composite volcanoes in the World, it is generally considered as a non-active volcano by population, visitors and even by some scientists. However, geological and geophysical evidence, including a large diversity of monitoring signals recorded during last decades, as well as a simple comparison with similar volcanoes that have erupted in recent times after hundreds or even thousands of years of quiescence, recommend to consider Teide as an active volcano and to take the necessary precaution in an island with nearly one million of permanent inhabitants and nearly 5 millions of visitors per year. What is the potential of Teide to erupt again? is the question that relies behind the fact of considering it as active, and that needs to be answered first. Based on the current volcanological, petrological and geophysical knowledge We propose a conceptual model on the magma recharge mechanisms, structure of the plumbing system, and eruption triggers and dynamics of Teide volcano that helps to understand its behaviour and to anticipate future activity.

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