Geophysical Research Abstracts,
Vol. 10, EGU2008-A-05436, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-05436
EGU General Assembly 2008

The Origin of Marine Conglomerates of Agaete, Gran Canaria

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Of all the deposits interpreted as having been emplaced by a tsunami but particularly sediments composed of boulders and gravel, those draping hillslopes at high elevations have been most controversial. Here, we present a preliminary interpretation of such enigmatic marine sediments located at Agaete on the north-west coast of Gran Canaria.

Previously interpreted as solely the result of a sea level high-stand, these perplexing marine sediments have recently been re-interpreted as having been deposited by tsunami. Our re-examination indicates that of the alternatives a tsunami origin is likely for some of these sediments. The deposit occurs in exposures of limited lateral extent, attached to the walls of the Agaete valley, and may be traced up to elevations of 188m a.s.l. and two kilometres inland from the coast. The deposits are up to 2m in thickness and contain a diverse assemblage of volcanic clasts, marine fauna and large beach-rock boulders. We identify two marine conglomerates interbedded with volcaniclastic sediments and soil horizons. Analysis of microfossils has yielded a variety of marine organisms including gastropods, bivalves, sharks' teeth, echinoid spines and foraminifera. Petrography analysis has shown a complex diagenetic history for these sediments. The evidence, however, supports a tsunami origin for some the beds, whereas others may be attributed to flash floods and sea-level highstand. Dating of the putative tsunami deposits has not yet been undertaken, but the Güimar lateral collapse

on the neighbouring island of Tenerife (age range between 1.75 Ma and 32 ka) has been cited as a possible tsunami source.