

CHARACTERIZATION OF VOLCANIC ASH, PRODUCED BY THE 1963-1965 ERUPTIONS OF IRAZÚ VOLCANO, COSTA RICA

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Applying the power law method, a minimum and maximum volume of $4.88 \times 10^7 \text{ m}^3$ and $1.48 \times 10^9 \text{ m}^3$ of volcanic ash for the 1963-65 VEI 3 eruption of Irazu volcano was found. Using the minimum volume estimation, the total grain-size median was calculated as 1ϕ , which is consistent with the VEI rating. The grain-size distribution around the crater appears to be consistently coarser to the west. This is attributed to the easterly Trade Winds that prevail during the dry season. These strong winds, along with the dry atmospheric conditions, allowed coarse ash to be transported over long distances. Integrating this new information into the Tephra2 modeling program confirmed the hazards that a historically-common VEI 2 and a more rare VEI 3 eruption of Irazu volcano presents to the two major metropolitan areas of Costa Rica – San Jose and Cartago - as well as to the southern agricultural slope of Irazu volcano.