

3-D VISUALISATION AND DETAILED PHOTO- GEOLOGICAL MAPPING OF THE ARMERO DEBRIS FLOW (COLOMBIA), USING LANDSAT TM IMAGENS

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On november the 13th of 1985, the City of Armero was destroyed by a debris flow generated by a reactivation of the Nevado del Ruíz Volcano, located in the northern portion of the Central Cordillera of Colombia.

Further studies have indicated that the flow occurred in at least three principal pulses, each one with different hydrodynamic characteristics, as has been observed in other places of the world and by the survivors of the tragedy.

Landsat TM data processing was carried out in a subscene taken two years and four months (22 march 1988) after the debris flow sedimentation. False color composites were generated and combined with digital terrain models and the geological information available, in order to create perspective views for visualising the catastrophe magnitude and the flow characteristics. Taking advantage of Landsat TM images high spectral resolution, a detailed photo-geological mapping of its three principal pulses was carried out, in order to improve the previous photointerpretations elaborated with aerial photographs.