

FACIES DISTRIBUTION, INTERFINGERING, MERGING AND OVERLAPPING AT CLOSELY SPACED ANDESITIC COMPOSITE VOLCANOES IN THE EAST CARPATHIANS, ROMANIA

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The Calimani-Gurghiu-Harghita volcanic chain, part of the Carpathian calc-alkaline volcanic arc, consists of closely-spaced Miocene-Pleistocene andesitic composite volcanoes. Central, proximal, medial, and distal volcanic facies are considered. As volcanoes grow, prograding facies boundaries shift away from the edifice center. Facies distribution is axi-symmetrical at isolated volcanoes emplaced on flat topography, while bilateral symmetry dominates at volcanoes with monoclinial basement topography, as in the East Carpathians. Graben-and-horst structures induce preferential distribution of volcanic products along graben valleys in the South Harghita Mts. Interfingering, merging and overlapping at closely-spaced stratovolcanoes may result in an extremely complex facies architecture of the volcanic arc segment. Interfingering of medial facies is frequent at roughly coeval volcano pairs developing a common low-lying intercone area (e.g. the complex Calimani edifice and the Fancel-Lapusna volcano). Merging of medial facies is considered at closely-spaced coeval volcanoes of similar petrography which develop sideways a common volcanoclastic apron within which lithologies belonging to individual volcanoes are indistinguishable (e.g. the Sumuleu – Ciurani-Fierastrae – Ostoros group). Successively active adjoining volcanoes develop overlapping volcanic facies. Medial and distal facies of older volcano may underlie central or proximal facies of younger volcano, as in the South Harghita Mts. Far-reaching debris avalanche deposits of an older volcano (Rusca-Tihu in the Calimani Mts.) underlie a number of younger volcanoes in the Gurghiu Mts.