

Lithic fragment concentration zone of Ito pyroclastic flow deposit, Aira caldera, Japan

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A lithic fragment concentration zone (LCZ) is often found in the lower part of Ito pyroclastic flow deposit, Southern Kyushu, Japan. The LCZ shows layered or lenticular shape. It consists of abundant accidental lithic fragments and small amount of pumice fragments and ash. The size of lithic fragments is larger than pumice fragments, whereas lithic fragments are smaller than pumice fragments contained in the massive part of Ito pyroclastic flow deposit (defined as NI; hereafter). The LCZ can be divided into five by difference in their facies and/or localities, i.e., basal LCZ type a and b (BLa, BLb), lower LCZ (LL), and total layer LCZ type a and b (TLa, TLb). The BLa is recognized in the basal part of Ito pyroclastic flow deposit. It contains well-sorted lithic fragments and less fine ash. The BLb overlies Tsumaya or Tarumizu pyroclastic flow deposits and covered by NI. The LL is intercalated between basal layer and NI. The BLb and LL contains poorly-sorted lithic fragments and abundant fine ash. There is no NI in the proximal area where TLa and TLb can be found. They are covered directly with post Ito pyroclastic flow eruption deposits and soil. The TLa is massive and is a mixture of poorly-sorted lithic fragments and ash. The TLb is the thickest (up to 30 m thick) among the five types. It shows wide vertical variations in grain size and kind of lithic fragments. Detailed features mentioned above provide important information on mode of emplacement and timing of deposition of LCZ throughout the eruption.