

## 幸屋火砕流堆積物及びその給源近傍相のガラス組成と堆積様式

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Glass Composition and Emplacement Mode of Koya Pyroclastic Flow Deposit  
and Its Proximal Equivalent

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Koya pyroclastic-flow deposit from the 7.3 ka event of Kikai caldera is a low-aspect ratio ignimbrite (LARI). The pyroclastic flow was considered to traveled across the sea and reaches up to the adjacent islands and the mainland of south Kyushu which is about 40–80 km away from the caldera. Representing the proximal facies of Koya pyroclastic-flow deposit, Takeshima pyroclastic-flow deposit comprises three or more flow units with a maximum thickness of 30 m. However, in contradiction with the distal deposits collectively called Koya pyroclastic-flow deposit that consist of one exclusively very thin flow unit.

Koya and Takeshima pyroclastic-flow deposits are underlain by pumice-fall deposits and overlain by ash-fall deposits (Akahoya ash). These pyroclastic units represent 7.3 ka Akahoya eruption from the Kikai caldera and commonly contains highly silicic glass shards and pumice of c. 75 wt% SiO<sub>2</sub>.

Koya pyroclastic-flow and Akahoya ash-fall deposits characteristically contain a lesser amount of glass shards and pumice fragments of lower silica content (c. 65 wt%). Contribution of the less silicic component to the deposits increases upwards from the basal to middle level of the deposit. This vertical variation likely indicates the progressive aggradation of pyroclasts. Less silicic glass fragments are almost absent from the upper part at one proximal place and exceptionally poor at some, distal and proximal places, perhaps reflecting heterogeneous contribution of the less silicic component to the source magma and/or locally different erosional and depositional conditions within the flow.

**Key words:** Koya pyroclastic flow, low-aspect ratio ignimbrite, progressive aggradation

## 1. はじめに

幸屋火砕流堆積物は、薩摩・大隅両半島南部の広い範囲に極めて薄く堆積している特異な火砕流堆積物である(宇井, 1967, 1973)。Walker *et al.* (1980) は、このように層厚が薄く、広い範囲に分布する火砕流堆積物を Low-aspect ratio ignimbrite と呼び、宇井・Walker (1983) はこれに拡散型大規模火砕流堆積物の訳語を用いた。拡散型大規模火砕流の例としては、Taupo ignimbrite (Wilson, 1985), Campanian ignimbrite (Fisher *et al.*, 1993) および阿蘇4-鳥栖火砕流 (Watanabe, 1978, 1984; Suzuki-Kamata and Kamata, 1990) などが知られている。しかし、拡散型大規模火砕

流堆積物の記載例は少なく、その流動堆積機構についても様々なモデルが提唱されている (Walker *et al.*, 1981; Wilson and Walker, 1982; Suzuki-Kamata and Kamata, 1990 など)。

本論文では、幸屋火砕流堆積物とその給源近傍相である竹島火砕流堆積物を構成する火山ガラスの化学組成について垂直変化を調べ、これが給源近傍から遠方まで広い範囲で系統的に認められることを明らかにする。

## 2. 鬼界アカホヤ噴火噴出物の概略

幸屋火砕流堆積物は、鬼界カルデラを給源とし、先に

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