

沈み込み帯におけるヒスイ輝石の役割 Role of jadeitites in subduction zones: key to understand arc magma source

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Magmas erupted above subduction zones show the characteristic chemical compositions which are reflected mixing in the magma source region among hydrous fluids derived from the subducted oceanic crust, subducted sediments and mantle rocks. In the study of jadeite - quartz rocks within serpentinite melanges in the Yorii area of the Kanto Mountains, Japan, we found high concentrations of Zr and Nb, with low LILE (large ion lithophile elements) concentrations. The jadeite - quartz rocks were formed in the Jurassic subduction zone. Typical arc volcanic rocks are depleted in the HFSE, therefore some material should preferentially take such elements. We considered that jadeite-quartz rocks may have undergone processes that increased HFSE (high field strength elements) concentrations the rocks by subduction related fluids prior to those upward migration to the mantle wedge. Although these jadeite-bearing rocks are rare on the surface, they could be abundant in or above subducted slabs. Jadeite-bearing rocks could be a key to understand the mechanism for mixing and transport of these components.

Keywords: jadeite, Yorii, Jurassic accretionary complex