

Lower crustal granulite facies metamorphism and generation of S-type granitic magma, in the Uetsu area, northern Japan

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Various types of metamorphic rocks occur as xenoliths in the Sumikawa granodiorite body, Uetsu area. The metamorphic grade of the xenoliths reached to granulite facies. The highest grade Grt-Sil-Crd granulite underwent clockwise P-T-t path, and partial melting reaction has been occurred at about 600-700MPa and above 850C. The metamorphic event caused by regional metamorphism in the lower crust, because the intrusive event of the Sumikawa granodiorite is more later stage. The range of the initial Sr-isotopic ratios of the xenoliths is considerably lower than that of the mudstones of the Ashio-belt, on the other hand that is almost same with that of the Cretaceous S-type granitoids in the nearby area. These xenoliths and S-type granitoids are thought to be restite and melt, respectively.