

## クラック内における結晶粒界不安定

## Unstable boundary formation behind the growth front in sealing of open crack

鳥海 光弘<sup>1\*</sup>, 福山 繭子<sup>2</sup>

TORIUMI, mitsuhiro<sup>1\*</sup>, Mayuko Fukuyama<sup>2</sup>

<sup>1</sup> 海洋研究開発機構, <sup>2</sup> 秋田大学

<sup>1</sup>JAMSTEC, <sup>2</sup>Akita University

Unstable boundary formation behind the growth front in sealing of open cracks

Mitsuhiro Toriumi \* and Mayuko Fukuyama\*\*

\* IFREE, JAMSTEC

\*\* IES, Academia Sinica/ Univ Akita

Plate boundary quartzite metamorphic rocks contain abundant sealed open cracks and shear cracks that are occupied mainly by quartz with minor amount of albite and chlorite. Apparently the sealed cracks can be classified into two types: one is the comb type and another is the granular type. The latter displays rapid increase of grain size toward the center of the sealed cracks and the grain size proportional to the width of the sealed cracks as indicated by Toriumi and Hara (1995).

The growth front in the sealing of the cracks is considered to be parallel to the wall surface and it faces fluid phase in the cracks. The boundary behind the growth front is characterized by wavy interface, showing the various wavelengths of periodicity. This type of unstable boundary should be formed by the instability of growth front during precipitation of constituent minerals in active open cracks. The wavelength of the unstable boundary increases with increasing grain size. The comb type sealed cracks show narrow wavelength but the granular type ones do wide wavelength. In this study, the relationship between the unstable boundary and the instability of growth front during the sealing of cracks.

Crack geometries and deformation by the crack-seal mechanism in the Sambagawa metamorphic belt, Toriumi, M and E. Hara, *Tectonophysics* 245, 249-261, 1995.

Keywords: unstable boundary, crack sealing, instability of growth, plate boundary metamorphism