Relationship between stylolite and faults in chert

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Stylolite is a structure developed mainly in cherts and limestones, which are the main constituent rocks of accretionary complex. Moreover, pressure solution being the formation process of stylolite, is an important plastic deformation mechanism that lowers the crustal strength. In this study, we verified that stylolite develops in the chert block, could act as a weak surface leading to fault formation, through both field and microstructural observations.

Our results suggest that 1) that the fault was formed after stylolite was created, and 2) that the strike and dip of fault are almost same as those of stylolite planes. In other words, it is strongly suggested that stylolite could act as a weak surface leading to fault formation.

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