Modelling thermal maturity of an accretionary wedge

Modelling thermal maturity of an accretionary wedge

Mannu Utsav[2]、*木下 正高[1]、Gerya Taras[3]
Utsav Mannu[2], *Masataka Kinoshita[1], Taras Gerya[3]

1. 東京大学地震研究所、2. Department of Earth and Climate Science, IISER Pune、3. Institute of Geophysics, ETH Zürich
1. Earthquake Research Institute, University of Tokyo, 2. Department of Earth and Climate Science, IISER Pune, 3. Institute of Geophysics, ETH Zürich

In accretionary margins, the estimation of peak heating through the thermal maturity of organic material reveals differentiated deformational pathways in the adjoining sections of the wedge. As the thermal maturity of the deformed structures is a function of both the geothermal gradient and the duration of time it has been exposed to different gradients, the distribution of vitrinite reflectance (the measure of thermal maturity) in the wedge does not necessarily reveal the temporal deformational pathway of the individual pockets. As a result, the different portions of the accretionary wedge exhibit different correlations between the thermal maturity and a unique deformational pathway. These different correlations can be explored through the means of geodynamic modelling which can then be used in the field to ascertain a more holistic picture of deformation in an accretionary wedge. Therefore, in this study, we use a 2D plate subduction thermomechanical model, to simulate formation of accretionary wedge and the track the evolution of the vitrinite reflectance in the accretionary wedge.

キーワード：thermal maturity、accretionary wedge、numerical simulation
Keywords: thermal maturity, accretionary wedge, numerical simulation

©2019. Japan Geoscience Union. All Right Reserved.