

## Three dimensional seismic velocity structure at 37E on Southwest Indian Ridge

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### 1. Introduction

The mid-ocean ridge process depends on a balance between spreading rate and melt supply, and the melt supply should reflect the physical and chemical character of mantle beneath the ridge. We target on the Southwest Indian Ridge 37E, where the Marion hotspot exists at southern part of this spreading system. So we expect melt supply may be different between north part and south part. Moreover, this area may be oblique spreading ridge. So, it is important to investigate structure of this area.

### 2. Observation and analysis

We conducted a seismic refraction/reflection survey using ten ocean bottom seismometers (OBS), multi-channel hydrophone streamer (48 ch), and 20 1 x 2 air guns. The air guns were shot with 150m interval. We fired 2994 shots.

In analysis, we model 2D velocity model using first arrival data by PMDM (Sato and Kennett, 2000). Then, we make 3D initial model from 2D results. Using this 3D model, we model 3D velocity structure by FAST program (Zelt and Barton, 1998).

### 3. Results

From the 3D velocity structure, crustal thickness is about 3-4km. Crustal thickness of east part is thicker than that of west part. There are low velocity areas beneath east and west ridge segments.