Auxiliary material for:

Lucky Strike Seamount: Implications for the emplacement and rifting of segment-centered volcanoes at slow-spreading mid ocean ridges

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Geochemistry, Geophysics, Geosystems (G-cubed)

Introduction

Auxiliary materials include the a) side-scan sonar maps at high resolution, and b) files of digitized faults (east- and west-looking) and fissures.

Sonar maps where generated from acoustic backscatter grids, available at: http://www.marine-geo.org/tools/search/Files.php?data\_set\_uid=21460

Two sonar mosaics are provided, with tracks overlapped to construct a west-looking and and east-looking mosaic. Acoustic backscatter is presented with bright areas corresponding to high acoustic reflection, and dark ones to low acoustic reflection. The contours of the shipboard bathymetry are also overlain.

Data files correspond to points digitized directly over the sonar mosaics along the edge of fault scarps of the center of fissures. These data are also available at:

http://www.marine-geo.org/tools/search/Files.php?data\_set\_uid=21461

Details on both the processing and the digitization of the tectonic features are given in the manuscript.

1. fs01.pdf (Final\_FIGSUP01a.pdf & Final\_FIGSUP01b.pdf). Map of the west- and east-looking acoustic backscatter mosaics (a and b respectively) generated from DSL120 sidescan sonar data at a resolution of 3x4 m. The bathymetric contours are also overlain
2. ts01.txt (Faults\_Eastward.lonlat). Digitized upper edge of east-looking fault scarps. Separation of individual scarps is indicated by the text “NaN NaN”.

2.1 Column “lon”, decimal degrees, longitude of digitized point

2.2 Column “lat”, decimal degrees, latitude of digitized point

1. ts02.txt (Faults\_Westward.lonlat). Digitized upper edge of west-looking fault scarps. Separation of individual scarps is indicated by the text “NaN NaN”.

3.1 Column “lon”, decimal degrees, longitude of digitized point

3.2 Column “lat”, decimal degrees, latitude of digitized point

1. ts03.txt (Fissures.lonlat). Digitized center of fissures. Separation of individual scarps is indicated by the text “NaN NaN”.

4.1 Column “lon”, decimal degrees, longitude of digitized point

4.2 Column “lat”, decimal degrees, latitude of digitized point