

MIGATION OF A MELT ANOMALY ALONG THE MAR RIDGE S. OF THE AZORES

J. Escartin ¹, M. Cannat ¹, G. Pouliquen ², J. Lin ³

¹ L. Petrologie, CNRS, Paris, France

² IPGP, Paris, France

³ WHOI, Woods Hole MA, USA

Gravity and bathymetry data are used to constrain the crustal structure in the FAMOUS-Lucky Strike region (MAR, 36-39N), immediately south of the Azores hotspot. A magmatic pulse was initiated near the Azores hotspot 36 Ma ago, and propagated southward at 60 mm/mry along the Mid Atlantic Ridge, as indicated by shallow V-shaped volcanic ridges at each side of the axis. The excess melt resulted in total crustal thickness of 14 km at 39N decreasing to 8 km at 36.5 km, emplaced as volcanic plateau on-axis. Excess magmatism ceased abruptly, and was coeval with the onset of rifting and later normal seafloor spreading.