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# 3-D magma chamber structure beneath the 9°03'N OSC on the East Pacific Rise

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A seismic reflection and tomographic experiment conducted at the 9°03'N overlapping spreading center (OSC) along the East Pacific Rise (EPR) provides three-dimensional images of its axial magma chamber. The ARAD 3-D (Anatomy of a Ridge Axis Discontinuity) survey was undertaken in order to test models of magma supply at the fast-spreading EPR. Reflectivity volumes disclose the structure of the axial melt lens and feeding conduits within the 20 by 20 km survey box [Kent et al., 2000]. Tomographic inversions reveal that an intense low velocity zone (LVZ) underlies both limbs of the OSC and part of its basin. At shallow depth, the LVZ underlies the melt sill reflection imaged by the MCS survey. Deeper, the low velocity bodies are focused beneath the two N-S extremities of the basin. The conjunction of multichannel and wide-angle seismic imaging of the axial magma chamber indicates that both the melt sill and the LVZ are not centered below the rise crest but skewed toward the OSC basin. The two seismic methods show evidence for a robust magma supply beneath the OSC. A processing technique (range-gated stacking) utilizing amplitude variation with offset (AVO) characteristics of the magma chamber reflector will be presented, and may give insight into fine-scale variation (e.g., melt versus mush) of physical properties within the sill.