

## 1999 Fall Meeting

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08:30h

T11F-01 INVITED

### Side Edge Of Kamchatka Slab: 1998-1999

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In August of 1998 a joint team of Yale University and Russian Academy of Science investigators installed a broad band array of 15 seismic stations spanning the length of Kamchatka. The purpose of the array is to investigate the possibly torn edge of the Pacific plate as it subducts beneath the Kamchatka Arc at its northern terminus where the Bering fault intersects with the Kamchatka Arc. Connecting the western Aleutian oblique subduction zone to the arc-perpendicular Kamchatka subduction presents certain spatial difficulties in accommodating excess slab material as it bends around the corner. Our model eliminates this problem by proposing a tear in the slab between Adak Island and Kliuchevskoi Volcano in Kamchatka. Shallowing of seismicity, unusual volcanic products, high heat flow in the Komandorsky basin each contribute to the accumulated data suggesting the torn slab model is correct. One objective of the large scale array is to determine flow in the upper mantle associated with slab roll back as material is ejected from beneath the Kamchatka slab around the edge of the slab beneath the Komandorsky Basin. If our model is correct we expect a consistent pattern of anisotropy as flow curls around the edge of the slab, heating and ablating the cold lithosphere as it plunges into the mantle. On a local scale, seismic investigations of the exploding Karymsky and Kliuchevskoi volcanoes are providing insights into volcano dynamics and the relationship of the subducting plate and surficial eruption products. We will present a first look at the data addressing these issues and present our initial interpretation.

DE: 7218 Lithosphere and upper mantle

DE: 7230 Seismicity and seismotectonics

DE: 7280 Volcano seismology (8419)

DE: 8123 Dynamics, seismotectonics

SC: T

MN: 1999 AGU Fall Meeting