

## 1997 Fall Meeting

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### **Volcanic Explosions at Karymsky: A Broadband Experiment Around the cone**

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In August, 1997, a broadband array of IRIS/PASSCAL stations was deployed in a ring around the exploding cone of Karymsky Volcano. Karymsky volcano erupted on January 1, 1996, and has been exploding regularly ever since. Explosions initially were spaced at intervals of approximately 4-6 minutes and recently the interval has increased to 10-15 minutes per explosive event. The events include impulsive, short blasts, and extended puffing, whistling and pulsating signals emanating from the crater vents. Prominent pulsing events occur intermittently with a characteristic 1 second period following large explosions. We used 3 PASSCAL stations, each with CMG 40 sensors recording at 125 samples/s, in a rolling deployment, where one station remained fixed and the other two leapfrogged around the cone. The fixed station included a microphone for simultaneous recording of infrasonic acoustics, which are clearly correlated with seismic observations. The circular array will be used to characterize and classify cone explosions in order to identify dynamic processes within the upper conduit of the volcano. Differentiating between frequency patterns of different classes of events will provide constraints for physical parameters and seismic source models that describe the eruptive process. Furthermore, waveform analysis of the recorded events will provide constraints on the importance of path effects and azimuthal variation of low frequency volcanic signals.

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