

S33B-0329

## **Seismic component of the STEEP project, Alaska: Results of the first field season**

Hansen, R A., Estes, S ., Stachnik, J., LaFevers, M ., Roush, J., Sanches, R., Fuerst, E., Sandru, J., Ruppert, N., Pavlis, G., Bauer, M

STEPP (SainT Elias Erosion/tectonics Project) is a five year, multi-disciplinary study that addresses evolution of the highest coastal mountain range on Earth - the St. Elias Mountains of southern Alaska and northwestern Canada. The overall goal of the project is to develop a comprehensive model for the St. Elias orogen that accounts for the interaction of regional plate tectonic processes, structural development, and rapid erosion. The seismic component of this project includes passive seismic experiment utilizing the IRIS PASSCAL Program instruments. The total project consists of 22 new, telemetered, digital broad band seismic stations, most accessible by helicopter only. There are 12 existing short period stations in the area. Eight new stations were installed in the coastal region in June 2005. Freewave IP radios provide the telemetry to the newly installed VSAT at the Bering Glacier camp site. The challenge was to find ice-free locations, on bedrock, large enough to install equipment and still have a helicopter landing zone nearby. The stations consist of Quanterra Q330 digitizers with baler, a STS-2 seismometer installed in a vault, a Freewave IP radio, a Scala 900 Mhz antenna, twenty 100 AH rechargeable batteries with a 2400AH backup Celair primary battery, and three solar panels mounted on hut. The acquired data is recorded in real time at the Alaska Earthquake Information Center located in Fairbanks and is incorporated into the standard data processing procedures. High quality data allows for more reliable automatic earthquake detections in the region with lower magnitude threshold. In addition to tectonic earthquakes, glacial events that occur within the vast ice fields of the region are also regularly detected. Broadband instruments complement regional broadband network for more reliable calculations of the regional moment tensors.