

An integrated active/passive seismological experiment in the southern Andes: activities and first results.

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The ISSA 2000 experiment should provide data to investigate state and structure of the subduction zone and overlaying continental margin at a segment of the southern Andes. The experiment consists in three parts. 1. Continuous operation between May 1999 and December 2000 of 13 BB stations along a 430 km long West-East line at the latitude 39.4°S and 8 BB stations along a North-South set-up. With its recordings of teleseismic events we will apply receiver functions method and anisotropy studies. 2. Operation of a regional seismic net from November 1999 until April 2000 with an installation of additional 50 short and middle period 3-component seismometers with continuous recordings. The net covers the area between 36° to 39.7° S latitude and from the Chilean Pacific coast to 69.5° W in Argentina. Additionally we run a set of Ocean Bottom Hydrophones off the Chilean coast for a five week period during January and February. We will do seismicity and topographic studies for v_p , v_p/v_s and Q_p and investigate focal mechanism and moment tensors. 3. A seismic refraction W-E line at the latitude of the BB stations is going to be measured. Shots from the volcanic cordillera observed to East and West as well from the Pacific ocean to the East serve as signal source. An evaluation of the first data indicate a crustal thickness of 30 km below the Longitudinal valley. More details and first results will be presented.