

## LOCAL EARTHQUAKE TOMOGRAPHY OF THE ANDEAN CHAIN AT 20°S.

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### **ABSTRACT** :

A temporary network of 41 Lithoscope seismic stations was operated for 6 months in Northern Chile and Bolivia, crossing the entire Andean belt at 20°S.

The first step was to study the crust and upper mantle performing a teleseismic tomography. This study allows to image the velocity perturbations associated with the oceanic Nazca plate subducting beneath continental South America.

In our presentation we will focus on the second step devoted to a simultaneous inversion of arrival-time data from local earthquakes located within the Wadati-Benioff zone. This inversion for velocity and hypocentral parameters in a strongly heterogeneous region was carried out in order to test and strengthen the results obtained for the Andean continental lithosphere by classical teleseismic tomography.

Within the crust, the local tomography gives a smoothed image of the lateral velocity variations that matches the structures determined by refraction profiling. A comparison of our results with those obtained previously along other segments of the Andean belt is presented.