



The ADN project : an integrated seismic monitoring of the northern Ecuadorian subduction

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The subduction of the Nazca plate beneath South America has caused one of the largest megathrust earthquake sequence during the XXth century with three $M > 7.7$ earthquakes that followed the great 1906 ($M_w = 8.8$) event. Better understanding the processes leading to the occurrence of large subduction earthquakes requires to monitor the ground motion over a large range of frequencies. We present a new network (ADN) developed under a collaboration between the IRD-GeoAzur (Nice, France) and the IG-EPN (Quito, Ecuador). Each station of the ADN network includes a GPS recording at 5 Hz, an accelerometer and a broadband seismometer. CGPS data will quantify the secular deformation induced by elastic locking along the subduction interface, enabling a detailed modelling of the coupling distribution. CGPS will be used to monitor any transient deformation induced by Episodic Slip Event along the subduction, together with broadband seismometers that can detect any tremors or seismic signatures that may accompany them. In case of any significant earthquake, 5 Hz GPS and accelerometer will provide near field data for earthquake source detailed study. Finally, the broadband seismometers will be used for study of the microseismicity and structure of the subduction zone. The network includes 9 stations, operating since 2008 and covering the coastal area from latitude 1.5°S to the Colombian border. In this poster, we will present preliminary assessment of the data, first hypocenters location, magnitude and focal mechanism determination, as well as results about an episodic slip event detected in winter 2008.