

AN INTEGRATED SEISMOGRAPHIC AND GEODETIC NETWORK TO MONITOR THE DAVID GLACIER (SOUTHERN VICTORIA LAND ANTARCTICA)

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Ice streams are generally defined as conduits of fast flowing ice within an ice sheet, draining ice and sediments from inland to the surrounding oceans. As they play a major role in the ice mass balance and in the global level of oceans, they have been object of a wide scientific interest in the last three decades. During the XXI Italian Antarctic Expedition, in the austral summer 2005-06, we developed a jointed seismographic and geodetic network in the area of the David Glacier, in Southern Victoria Land.

Our goal was the contemporaneous observation of both seismic activity and surface kinematics of the ice stream to possibly correlate the registered microseismicity with potential surges of the glacier, eventually influenced by the Ross Sea tides.

For a period of three months (November 2005-early February 2006), 7 seismographic stations and 3 GPS geodetic receivers operated continuously in an area of about 100x50 square km.

Here we present some details about the development of the two temporary networks and preliminary results and implications.