

Contribution of DORIS to GGOS

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DORIS (Doppler Orbitography and Radiopositioning Integrated by Satellite), which is a Doppler satellite tracking system developed for a precise determination of satellite orbits and a precise positioning of ground stations, is one of the space geodetic techniques constituting the GGOS (Global Geodetic Observing System). DORIS system is composed of receivers on board the altimetric satellites and of an international network of ground stations. Each ground station consists of a dual-frequency 2036.25 MHz and 401.25 MHz transmitter (a DORIS beacon) including USO (Ultra Stable Oscillator), UPS (Uninterruptible Power Supply) and a remote control system through IRIDIUM on the inside, and an omnidirectional antenna and a set of meteorological sensors on the outside. Since the DORIS beacon transmits signals automatically, it is easy to operate and to maintain the DORIS ground station. The international network of about 60 ground stations deployed by CNES (Centre National D'Etudes Spatiales) and IGN (Institut national de l'information géographique et forestière) since 1986 and recently supported by IDS (International DORIS Service), is global, dense and homogeneous, and thus unique among the different techniques that contribute to the ITRF (International Terrestrial Reference Frame).

The only DORIS station belonging to Japan is located at Syowa station, Antarctica. To make the DORIS popular, we report the current Syowa DORIS system, its operation and its co-location with other space geodetic techniques.

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