

# Absolute and relative gravity observations at Dumont d'Urville, Terre Adélie, Antarctica

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- The absolute gravimeter is the FG5 # 206 designed by Micro-g Solutions, Inc.
- The relative gravimeter is a Scintrex CG3-M gravimeter.
- The instruments are provided by INSU-CNRS and operated by the gravimetry team of EOST.
- The 2006 gravity measurements at Dumont d'Urville were funded by IPEV (program GRAVITE 337).

# 1 Absolute gravity measurement at Dumont d'Urville

## 1.1 Station coordinates

Table 1: Geographical coordinates of the absolute gravity station at Dumont d'Urville.

Latitude	Longitude	Elevation (m)
$-66^{\circ}.67$ S	$140^{\circ}.17$ E	35

## 1.2 Hut



## 1.3 Absolute gravity

Table 2: Absolute gravity at the ground level in the gravity hut.

$dg/dz$ (nm/s <sup>2</sup> /m)	Drops*	$g$ (nm/s <sup>2</sup> )**	$\sigma$ (nm/s <sup>2</sup> )
3800	15997	9 823 871 723.6	35.8

\* 1 drop/10 s, 200 drops/set, 1 set/hour

\*\* 1 nm/s<sup>2</sup> = 0.1  $\mu$ gal

## 2 Gravity ties

- Ties relative to the absolute point.
- Benchmarks put by the SHOM (Service Hydrographique et Océanographique de la Marine).

### 2.1 Tide gauge

The benchmark is labelled GRAV 2.



## 2.2 Cap Prud'Homme

- Benchmark labelled GRAV 4.
- Benchmark was sealed before tanks were installed beside it.





### 2.3 Relative gravity

Table 3: Gravity ties at the tide gauge and Cap Prud'Homme on 8 February 2006. Values are relative to the absolute point (Section 1).

$\Delta g$ (nm/s <sup>2</sup> )		$\sigma$ (nm/s <sup>2</sup> )	
Tide gauge	Prud'Homme	Tide gauge	Prud'Homme
-64 417.7	-80 816.8	105.1	67.6