

Heave Compensation

sponsored by the European Community, patent pending



1. Task

Deploying valuable cable bound equipment into the deep sea is risky like playing yoyo with a gold bar. The strongest steel cable even stretches like a rubber string. Your payload would swing up and down by some 5 to 15 metres several times per minute like a bungee jumper. It is a forced oscillation caused by waves and sea state. There is an obvious need to stabilize your payload and to damp away these oscillations.

All heave compensators available on the market are acting on the cable length. They may well perform on short cables as used for shallow water operations (shelf areas). Unfortunately, they fail under deep ocean conditions, in particular at rough weather. Often the results are even worse. So the heave compensator is switched off and you loose time waiting for calm weather.

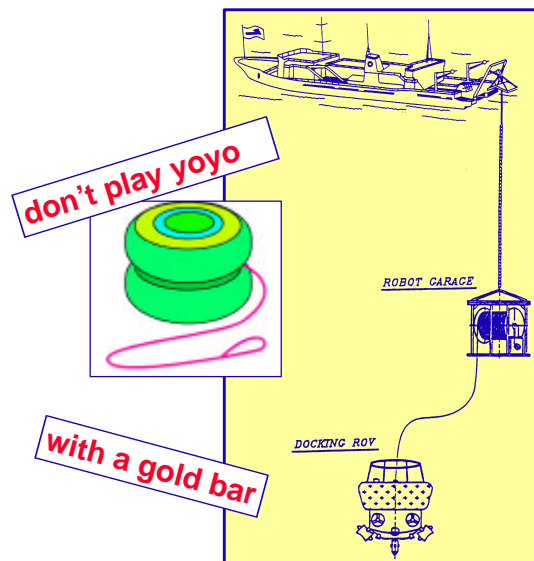
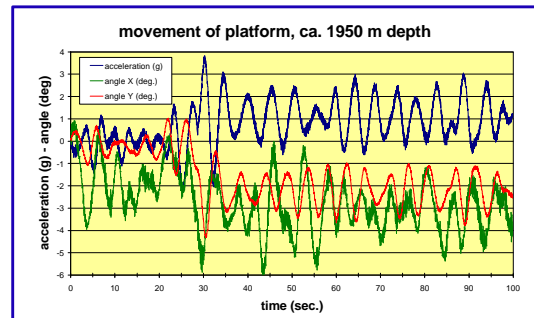
2. Solution

Closer investigation of the actual oscillation process has shown major non-harmonic components. Due to the elasticity of the long cable the payload deep down in the ocean does not simply follow the movements of the vessel at the surface. Therefore, you need a good method to control the cable length in function of

- the vertical movements of the vessel
- the force acting on the cable (appearing weight of the payload at any moment)
- length of the cable
- timing
- and other

How are the various factors linked together? Well, take the smart box from GeoTopic and plug in the signals of various sensors. A superior software does some calculations and provides the control signals to perform a proper job:

- signal 1 is acting on the storage winch of your deployment on board
- signal 2 is acting on your heave compensator (no matter, whether you apply a crane system or deviator drums for the cable or any other way)



3. Advantages

- safer ROV-operations
- less dependent on favourable weather (more working time)
- better yield of your investments
- ample use of your existing winch system
- much more (you know best)

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