

Boat Rocking Rolling -Energy

Low Lag

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<http://goo.gl/PPgfts>

Description

This script makes an object move like it is floating on water waves

It is meant for SL controlled vehicle-boats but is not restricted to that

Rocking and rolling can be turned on and off manually in the dialog menu

The script is **low energy** in that it puts a small load on the server, same as **Low Lag**

Technically

The motion is a KeyFramed Motion which has some characteristics:

- It uses **no script time** on the server. In fact the motion will continue without a script
The server **load is minimal**
- The physics type of the root prim **must be convex hull**
The physics weight must not exceed 64
Land Impact may explode when when a conversion to Convex Hull is needed
This may rule out this script on older vehicles that are created before mesh was introduced
- A KeyFramed Motion **can not work in a physical object**
- Child prims and sitting avatars, can not be moved or rotated during a KeyFramed Motion
A work around this is to pause the KeyFramed Motion while moving or rotating
A KeyFramed Motion **can be paused in any script** in the object

Implementing

It is necessary to have permission and ability to modify the script that control physics state

A controlled shift between two states is necessary since the boat must be physical when it is a vehicle and not physical when rocking

The following changes in the vehicle script are needed:

substitute:

```
llSetStatus(STATUS_PHYSICS, TRUE);
```

with:

```
llMessageLinked( LINK_THIS, TRUE, "PHYSICS", "" );
```

and substitute:

```
llSetStatus(STATUS_PHYSICS, FALSE);
```

with:

```
llMessageLinked( LINK_THIS, FALSE, "PHYSICS", "" );
```

Now this script will manage physics status and KeyFramed Motion

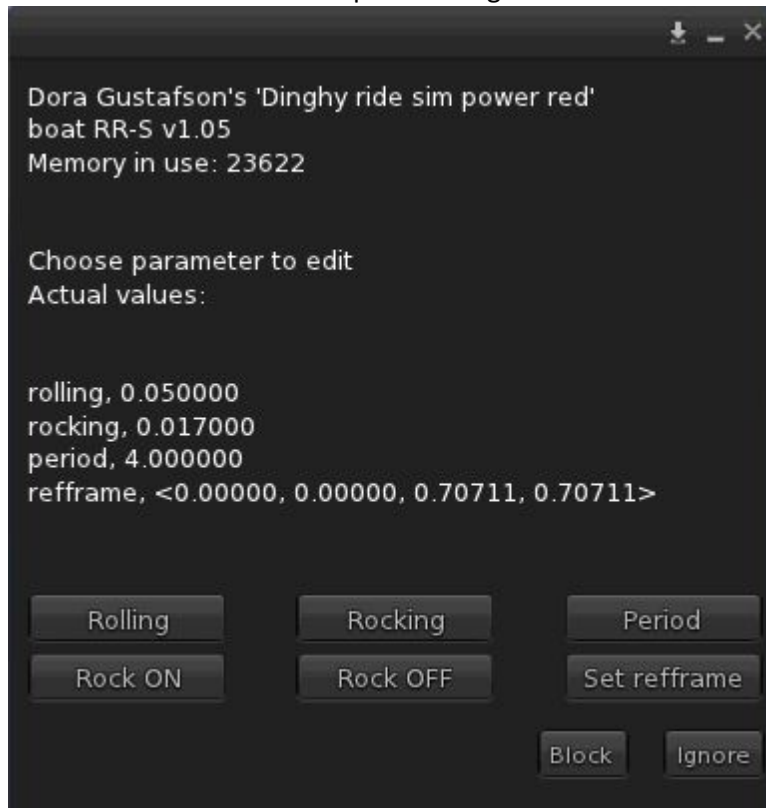
Rezzing

bit0 in start parameter: "param", is significant when rezzed by another object

- When bit0 = 0 the rocking will start at rez
- When bit0 = 1 will not be rocking at rez

Parameter editing

The chat command: "rockedit" will open a dialog menu for the owner:



Parameter editing

The parameters Rolling, Rocking and Period can be selected and edited

rolling, is the radius in meters for rolling

rocking, is a number between 0 and 1 where 0 is least and 1 is most rocking

period, is the wave period time in seconds

Rock ON and Rock OFF

Rock ON and Rock OFF in the dialog menu will turn rocking and rolling on and off

Note card

A note card called: "rock and roll data", can be used to save parameter values

Note card values are used to restore data after script reset

Example:

```
rolling, 0.05
rocking, 0.017
period, 4.0
refframe, < 0.0, 0.0, 0.0, 1.0 >
```

rolling, is the radius in meters

rocking, is a number between 0 and 1 where 0 is least and 1 is most rocking

period, is the wave time period in seconds

`refframe` should have same value as assigned by the vehicle constant: [VEHICLE_REFERENCE_FRAME](#)
 If the vehicle has Forward , Left and Up same as the prim, then `refframe` can be omitted in the card

How to pause the KeyFramed Motion

An example:

```
llSetKeyframedMotion([], [KFM_COMMAND, KFM_CMD_PAUSE]);
llSetLinkPrimitiveParams( i, [PRIM_POS_LOCAL, iPos]);
llSetKeyframedMotion([], [KFM_COMMAND, KFM_CMD_PLAY]);
```

Pausing can be done **in any script** in the object

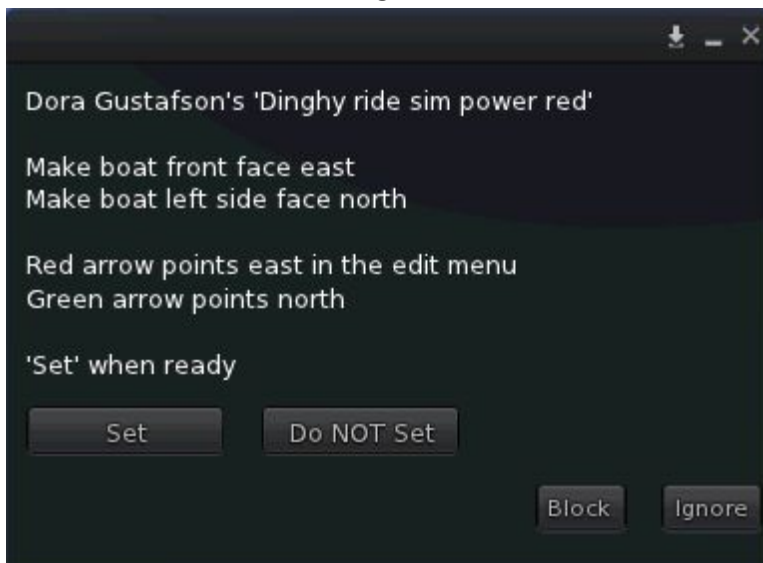
Reference frame

If the boat coordinates matches the vehicle coordinates the default setting will do and there is no reason to read further

If the rocking and rolling behave in a peculiar way it may be because the reference frame is different from the one used in the vehicle script

To obtain a proper reference frame do one of two:

1. copy it from the vehicle script
 Look for rotation in: `llSetVehicleRotationParam(VEHICLE_REFERENCE_FRAME, rotation);`
2. Click 'Set refframe' in the dialog menu and follow the instructions in this menu:



Place the boat with front facing east(red arrow) and with left side facing north(green arrow)
 Click 'Set' when the boat is placed as described

Obviously

The boat must have the modify permission to accept a script.

Some boats like the 'Loonetta', can not be modified, so they can not use this script.