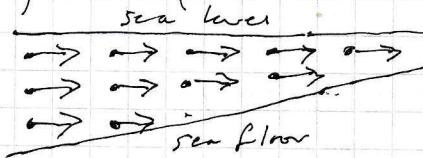


So the Baywatch NYC acceleration and velocities gives you the direction of motion of the water masses, and those are used in the local reference frame to restrict to one way or other (so if water is in a pipe it may be restricted to linear motion)



And perhaps the motion of the water would result in a rise in sea level which would transfer kinetic energy into potential energy, slowing the water

(although to start with I'd just find the motion or even mass of water)

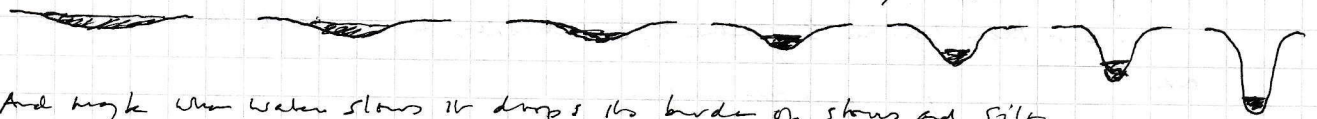


There could be a reference frame for the sea floor, but the water rolling uphill in shallow water, and long speed (and no need to calculate kinetic and potential energy).

Similarly a river valley would have masses of water being added at the surface, and then allowed to follow the topography of the valley, perhaps gradually accelerating downhill



And perhaps wherever these masses of water moved, they'd lift a bit of the underlying land, forming channels, maybe even canyons. Rivers may only gradually appear when a lot of moving water scours away the ground beneath



And maybe when water slows it drops its burden of stones and silt.



perhaps in a deep, narrow gorge water is moving fast, slowly from side to side and top to bottom and digging quite rapidly into the ground.

Brigitte and me arguing with Graine whether or not the Earth was flat. What a wonderful conversation!

It was a breath of fresh air.

And it was because I've just today been thinking about the sea level stuck to the surface of a spherical earth, which Graine didn't believe. And why should she?

I drew a picture of three ships looked like they had fallen below the horizon, and Leah had a video showing me. I have it's one of the simplest proofs of the curvature of the Earth. It was something Graine had never seen. And she was a bit puzzled by it. She's an artist. And she's Irish.

That's probably the wackiest conversation I've ever had on the Smokey Diving Bar.

Anyway, during the rest of the day, I began to clarify how I was going to handle the transformations between reference frames. I haven't worked it out completely. But I'm over half way there.

And when I've got it working, I'll be able to look at tidal motion and waves as well as Foucault pendulums.

Some good news from Ashia. Our political party (FPO?) has said that one condition on her joining a coalition government is the repeal of Ashia's smoky ban, which is due to come into force next year. (according to Brigitte) Brigitte was utterly delighted. So was Smokey Sam.

If it's true it's the fact that a political party has spoken up for smokers. UKIP was Nigel Farage spoke up for smokers a bit. But they dumped her smoky plot for as soon as he stepped down as leader.

How remarkable! I bet the FPO told us to be free of Tobacco Control. It's hard to believe. A political party has spoken up for smokers. It's unheard of.

But given 10 planets, that requires 10 transformations. Wouldn't it be easier to transform the position of a body into Barycentric XYZ, calculate its motion, and then transform back into its own reference frame?

I suppose it depends how many bodies are in each reference plane.

In the case of a single mass in some reference frame, it's probably easier to transform it to Barycentric XYZ than to transform all the planets to its reference frame. One requires 10 transformations. The other requires 2 transformations.

And with tidal motions I'd mostly have just one body

① transform ref frame to Barycentric XYZ

② Calculate all motions

③ transform back to ref frame.

Evolution ideas.

I think maybe I keep all bodies in Barycentric XYZ, and perform all motions in Barycentric XYZ, ...

... but then use the Barycentric XYZ velocities to convert to local reference frame

and

1. restrict motion

2. use previous position to find new position.

So Barycentric shows position in free motion. Local shows actual restricted position.

This entails no change in the Solar System motion calculations.

ref frame B \rightarrow ref frame A

Calculate all motions

ref frame A \rightarrow ref frame B

restrict restrictions.
find new positions

So all the motion restriction takes place in the B frame, and all the motion in the A frame.

It's beginning to take shape. Every body has its own reference frame. But all motions are carried out in the Barycentric reference frame. And all restrictions or motion takes place in the body's own reference frame.

Body reference frames will very often be changing all the time. So the first thing to do before any new motion calculation will be to find the correct reference frame - which is the current OXYZ Barycentric XYZ positions. And this is what I found yesterday with AxisMap.

So if I want to find the tidal motions I was thinking about last night this morning, I'd have a whole set of water masses, each with their own reference frame somewhere on the surface of the Earth, and then convert these to Barycentric XYZ, find all the acceleration and velocities due to gravity, and then convert back to the local reference frame, to get vertical velocities radially, and find new positions. (and later lag B)

It's been a remarkable day. It began with the ideas about K'das and lives. And developed into the ideas about how to handle different reference frames. And it ended with one of the most remarkable conversations in my life, a graini per se and her flight back hypothesis.

12 Nov 2017

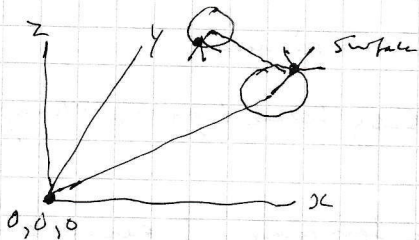
Today I hope I get Reference Frames working in Dynamics.java. And I hope that I at least get a Foucault Pendulum

If every body should have a reference frame, then maybe Reference Frame should extend Body, or vice versa

Maybe before there are any bodies there are reference frames in which the bodies get put.

On the other hand, reference frame can contain reference frames.

Reference frames should be defined in Boycentric XYZ. And surface reference frames



Reference frames need methods to translate from one reference frame to another

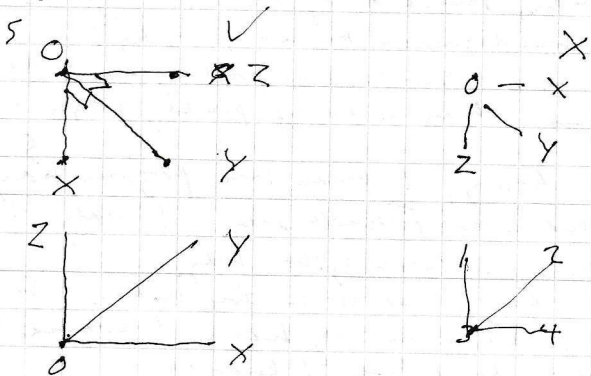
To say where reference frame B is inside reference frame A, and vice versa.

One transformation entails 3 + XYZ moves, and 3 + XYZ rotations, and the opposite transformation requires 3 - XYZ moves and 3 - XYZ rotations.

The planets have inside the planetary reference frame. And surface bodies have reference frames inside the planetary reference frame.

In my log, there isn't a hierarchy of reference frames. There are just different ones, that all exist inside each other.

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I sorted out the initialization problem with Dynamics.java by delegating initialization. And I got a RGB XYZ axis working, and created ReferenceFrame which used them as the Axes may code

I'm not really quite sure what I'm doing, but that isn't stopping me from doing it.

I've also created FoucaultPendulum, really just to try to use the reference frame. I'm still not sure if I've got things in the right place. I probably do because I've got the axes in the right place.