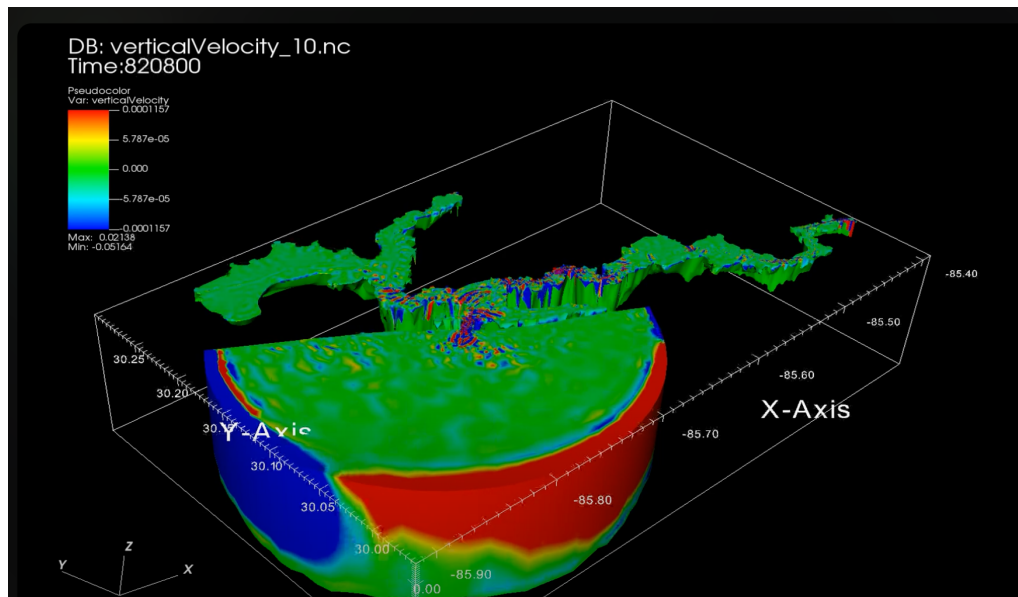
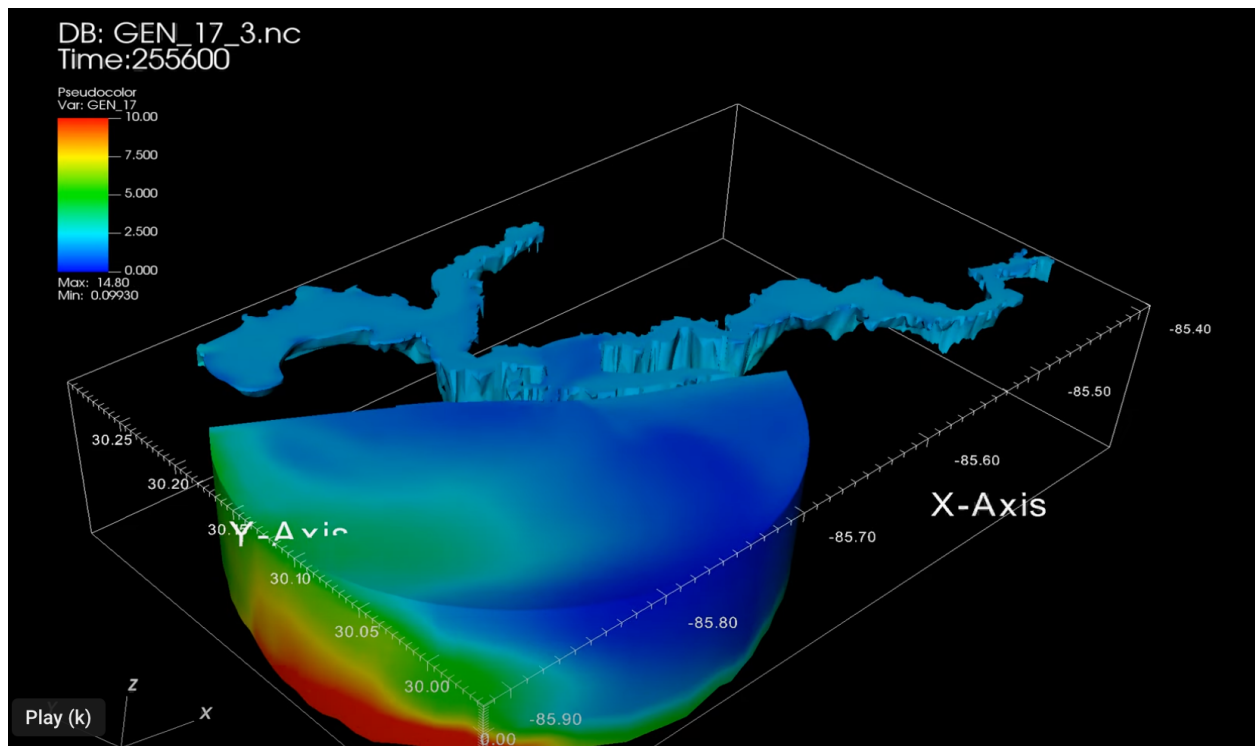


Mass balance linked to high vertical velocity at the boundary.

Vertical Velocity, Red==over 10m/day up, Blue==over 10m/day down, next to each other



Sinking, Tracer is being pushed up faster than it sinks



I redid this run last night and looked this morning...it did not stay stable as long. When you are tweaking the code so much, and it takes so long to run, you forget what you may have changed.

Box - and Numerical precision

Finer resolution does not mean higher accuracy. Finer accuracy==smaller timestep==**more timesteps**. Numerical errors can build up at every timestep.

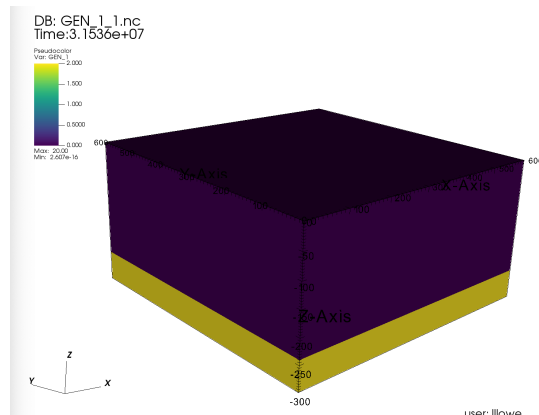
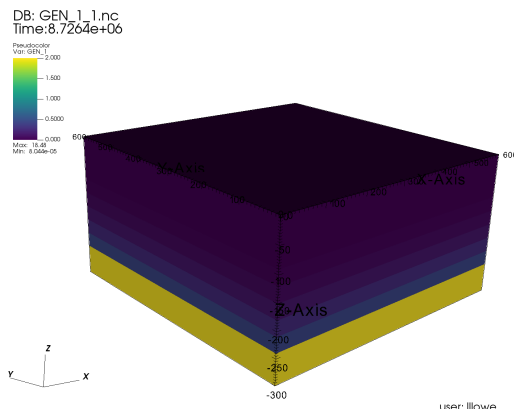
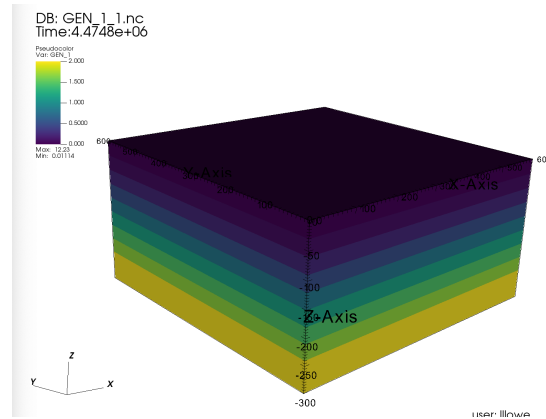
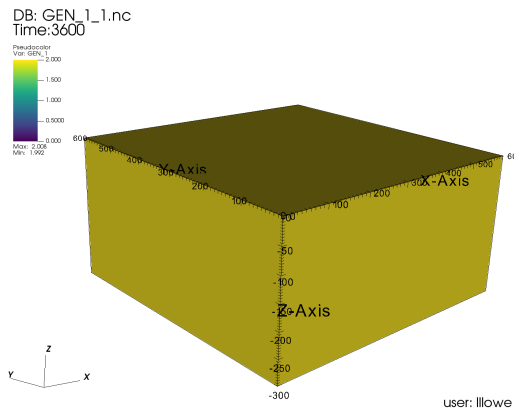
Once everything sinks, and also with **uniform initial conditions**, there are many 'almost zeros'. This is Box after going to double precision.

8759, 10, 1, 20.00000001199988, 20.00000001199988

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8760, 10, 1, 20.00000001199988, 20.00000001199988

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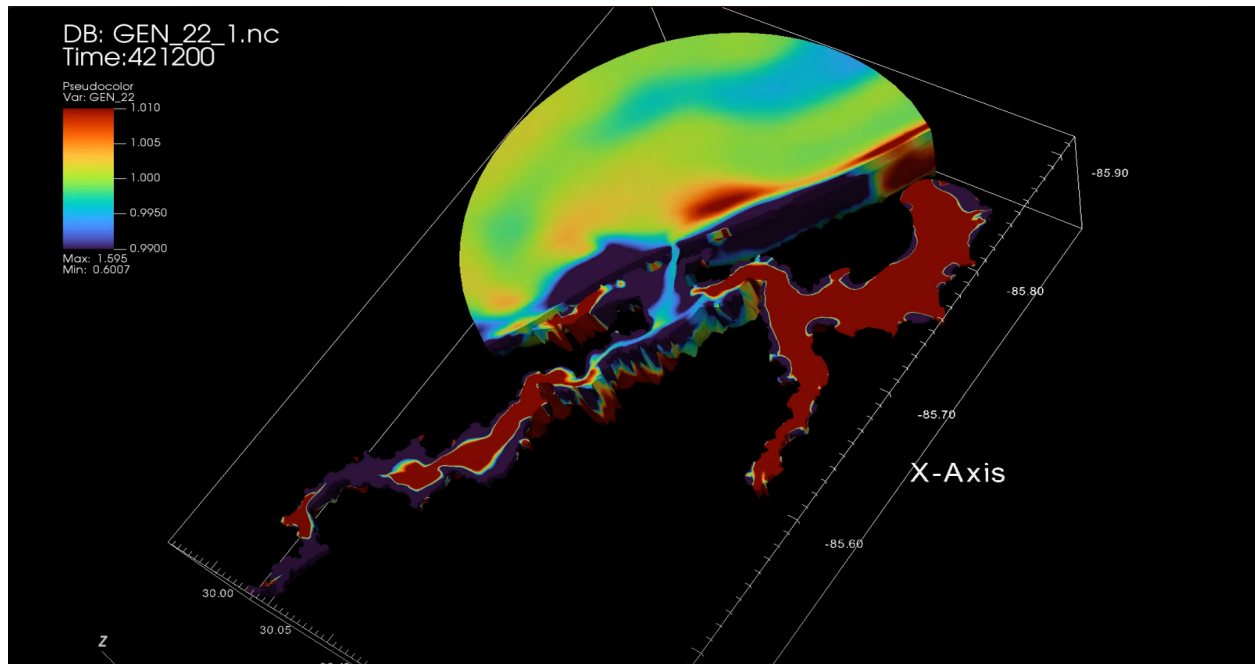
CGEM Tracers - why did the first round of movies look fine?

CGEM Tracer before, constant over time, but this was 'cheating'...no accounting for volume

[Tracer - no change in volume](#)



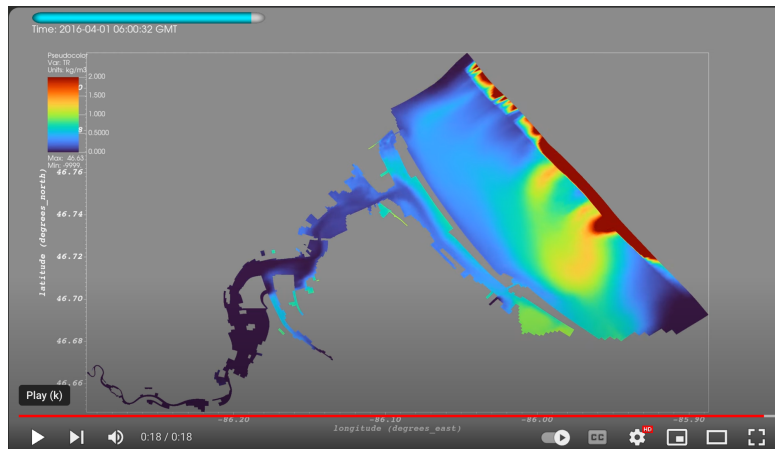
[Jellyfish Tracer](#) - This one accounts for volume. I would have noticed it **not** building up at the boundary - as would be expected - if I ran it longer and made the entire movie



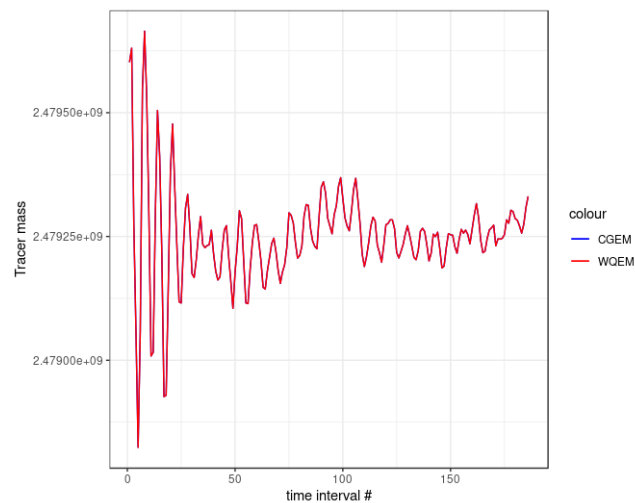
Things usually looks more like this

CGEM/WQEM-EFDC

[EFDC Tracer](#), moves around, builds up at the boundary



Still mass balances to 0.01%



Outstanding questions?

Lots of them. But it takes too long to run and look at the model. Even if I was working on this full time, I wouldn't have time. And I would be miserable.

Next Steps?

Now for the last slides of the [Elephant presentation](#).