**Webinar: 3D Coastal Modelling 101**
**Mar 16, 2022 1:55 PM** Actual Duration (minutes) 127 # Question 21

| # | Question | Answer | Question Time | Answered Time |
|---|---|---|---|---|
| 1 | I want to ask: Can the coastle model used to analyse the movement of sediment | Yes, the model has a sediment transport module that is used to simulate sediment movement, including erosion, deposition, consolidation, armouring, slumping and other related processes. | 03/16/2022 12:43:10 | 03/16/2022 12:45:47 |
| 2 | Is there a rule of thumb of when you move from the sigma to the z mesh? | Sigma coordinates are better at terrain following but experience numerical challenges when stratification is important. The z-coordinate or hybrid mesh options are typically better suited to modelling strongly stratified systems. For coastal models where stratification is important we usually recommend using the hybrid (surface-sigma over the top of z-coordinates) vertical discretisation scheme with TUFLOW FV. | 03/16/2022 12:53:45 | 03/16/2022 13:01:02 |
| 3 | What is the importance of Coastal Regulation Zone data for adapting to sea level rise in modelling coastal areas? | I think this might be a country specific matter. TUFLOW FV can definitley be used however to examine hydrodynamics that might occur in these zones, if provided with appropriate bathymetry (topography). Snapshots of simulation periods into the future can be undertaken at different initial water levels that step through these zones. | 03/16/2022 13:04:41 | 03/16/2022 13:11:20 |
| 3 | What is the importance of Coastal Regulation Zone data for adapting to sea level rise in modelling coastal areas? | Sea level rise is happening at a global level.Thank you very much. | 03/16/2022 13:04:41 | 03/16/2022 13:17:21 |
| 4 | How is real-time data analysed for preparation of shoreline management plans to reduce loss of lives and reduce damages to coastal infrastructure? | Water level and wave measurement networks are typically used along with coastal forecasting to help prepare for extreme coastal flooding and erosion events. | 03/16/2022 13:10:22 | 03/16/2022 13:12:57 |
| 4 | How is real-time data analysed for preparation of shoreline management plans to reduce loss of lives and reduce damages to coastal infrastructure? | Thank you .Do you use telemetry for data collection? | 03/16/2022 13:10:22 | 03/16/2022 13:20:23 |
| 5 | For floating stuff, will wind not matter as much or more than currents? | It definitely depends on the system that is being modelled. In sheltered environments such as coastal coves, currents will dominate, and conversely in windy conditions in an open coastal zone where the tide is turning, wind may dominate. TUFLOW FV can handle both situations. | 03/16/2022 13:11:07 | 03/16/2022 13:13:43 |
| 5 | For floating stuff, will wind not matter as much or more than currents? | Gday , we can look at both wind drift and currents with the particle transport. The example today had the particles moving via the current field. | 03/16/2022 13:11:07 | 03/16/2022 13:20:32 |
| 6 | Could the 3D surface behaviour be captured by a 2D model with 10m averaged velocity boundary conditions and 'earthfilled' depth to remove the deep water model component? Could similar surface flow behaviour be represented if only targetting surface flow behaviour? | That type of approximation may work in a few cases but in general the surface current behaviour will be influenced by mixing with the underlying water. A 3D model is going to be a more suitable platform in this case. | 03/16/2022 13:13:10 | 03/16/2022 13:15:57 |
| 7 | Thank you Mitchell Smith for your great presentation. I sow a nice time series data visualization, which software did you used. About the presetation of ocean showing concentration in 3D with yellow colour, which software did you use there too? | Thanks . The visualisations Mitchell has presented have been prepared in QGIS (a free GIS) using the TUFLOW Viewer plugin, which is also free and downloadable from the QGIS plugin library. Aquaveo SMS was also used to show some visualisations with arrows, and the community version is free | 03/16/2022 13:14:30 | 03/16/2022 13:16:45 |
| 8 | Great topic! The (thermal/ salinity) discharge in the near field is tricky in a large model. I wonder do you have any suggestions on that? Thanks ! | Thanks for answering! | 03/16/2022 13:16:59 | 03/16/2022 13:19:20 |
| 8 | Great topic! The (thermal/ salinity) discharge in the near field is tricky in a large model. I wonder do you have any suggestions on that? Thanks ! | live answered | 03/16/2022 13:16:59 | 03/16/2022 13:21:28 |
| 9 | Does the 3D Model consume longer time to finish a run? | OK | 03/16/2022 13:17:27 | 03/16/2022 13:20:12 |
| 9 | Does the 3D Model consume longer time to finish a run? | live answered | 03/16/2022 13:17:27 | 03/16/2022 13:21:39 |
| 10 | What are the current cost packages for government agencies? | What are the current cost packages for government agencies? | 03/16/2022 13:20:31 | 03/16/2022 13:20:31 |
| 10 | What are the current cost packages for government agencies? | Our price list is at tuflow.com - please have a look there! | 03/16/2022 13:20:31 | 03/16/2022 13:22:19 |
| 11 | does anyone feel like answering a citizen science question on manning coefficient selection? non visually based methods that can be used as inputs to hydrodynamic models? | does anyone feel like answering a citizen science question on manning coefficient selection? non visually based methods that can be used as inputs to hydrodynamic models? | 03/16/2022 13:20:36 | 03/16/2022 13:20:36 |

| | | | | |
|---|---|---|---|---|
| 11 | does anyone feel like answering a citizen science question on manning coefficient selection? non visually based methods that can be used as inputs to hydrodynamic models? | live answered | 03/16/2022 13:20:36 | 03/16/2022 13:22:44 |
| 12 | can the 3d model maybe show extent of environmental disasters such as oil spillage? | live answered | 03/16/2022 13:21:00 | 03/16/2022 13:23:50 |
| 13 | thank you | thank you | 03/16/2022 13:22:16 | 03/16/2022 13:22:16 |
| 14 | How suitable is this 3D model to forecast coast morphology? | live answered | 03/16/2022 13:22:25 | 03/16/2022 13:24:09 |
| 15 | Would you please give some information about the meshes size both in surface and in depth of the computational domain. is there any recommendation for choosing optimum meshes size? | | 03/16/2022 13:22:25 | |
| 16 | The boundary conditionx in 3D model is a key. I wonder do you use the open source datasets like HYCOM or CMEMS to extract temp/salinity BC? The velocity is also difficult in my opinion. THanks ! | Hi , yes these example today used HYCOM. I agree that velocity can be tricky. We are also looking at BRAN2020 at the moment which I'm interested to see how it's velocity looks. | 03/16/2022 13:22:38 | 03/16/2022 13:24:16 |
| 16 | The boundary conditionx in 3D model is a key. I wonder do you use the open source datasets like HYCOM or CMEMS to extract temp/salinity BC? The velocity is also difficult in my opinion. THanks ! | Oh! sorry I missed the early part. Thanks! I will check the replay! | 03/16/2022 13:22:38 | 03/16/2022 13:25:14 |
| 17 | Thanks so much Mickael Barry. I am a statistician and I very interested to learn these knowledges. They are amazing. | Thanks for the feedback! | 03/16/2022 13:22:59 | 03/16/2022 13:25:35 |
| 18 | Can sediment modeling be added to 2d or 3d model to predict erosion/deposition areas or is velocitiy used as an indicator instead? | | 03/16/2022 13:23:30 | |
| 19 | Do you know if this model or any other 3D modelling techniques were used to find the location of Malaysian Airplane MH370? | I suspect that some particle modelling was likely used but unsure of the details Mohammad. | 03/16/2022 13:26:28 | 03/16/2022 13:31:03 |
| 20 | What was the answer to Mitch's quiz question? Climate change? | I got the wrong data...haha, the answer was ocean currents and 2D/3D differences | 03/16/2022 13:29:08 | 03/16/2022 13:29:49 |
| 21 | thanks for the non est timezone surprise | thanks for the non est timezone surprise | 03/16/2022 13:31:06 | 03/16/2022 13:31:06 |