GEOTEST GEOLOGEN / INGENIEURE / GEOPHYSIKER / UMWELTFACHLEUTE

Title: **ROFMOD 5 - Tutorial 2: Scenarios**
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Time needed: About 30 to 45 minutes

Summary

In this tutorial we would like to explain the **scenario management** and its possibilities. Starting from a given scenario, we will work out **variants with different terrain and forest zones**. In the final scenario, we insert a **protection dam** and consider its effect.

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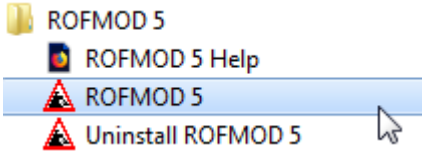
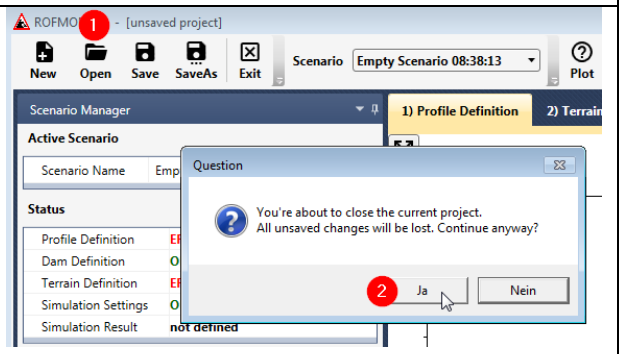
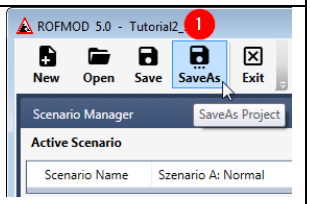
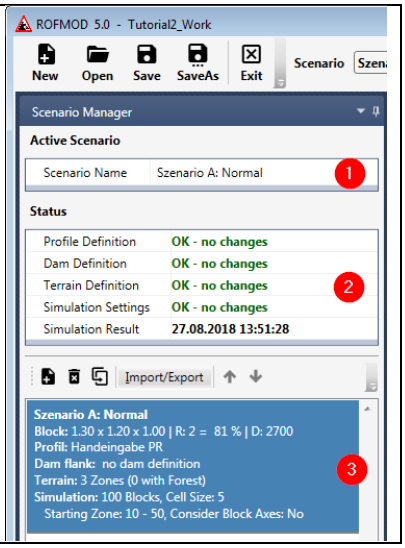
0. Getting started

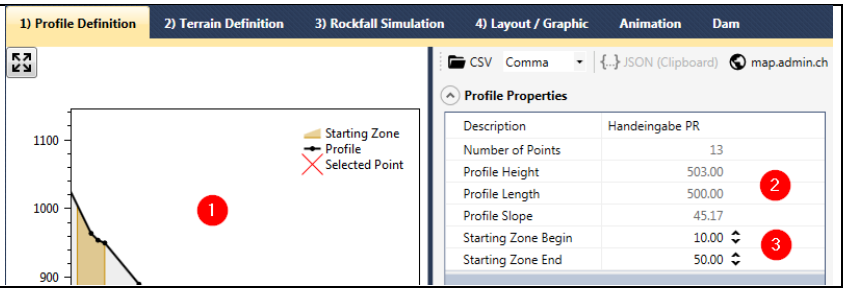
Start “ROFMOD 5” on your Windows PC.	
1. Click “Open” to open an existing project file. 2. Confirm the dialog that warns you that the current project is lost with “Yes”. Open the project file “**Tutorial2_Start.pzip**”	
1. Save the current project under a new name, for example “**Tutorial2_Work.pzip**”.	

1. Examine the existing scenario

1.1 Scenario Manager 1. Scenario name of the active scenario 2. Scenario status: All settings have been taken into account in this simulation. The saved calculation is from August 27, 2018. 3. Summary of the active scenario: Block size, profile description, dam definition, terrain zones summary, simulation settings	

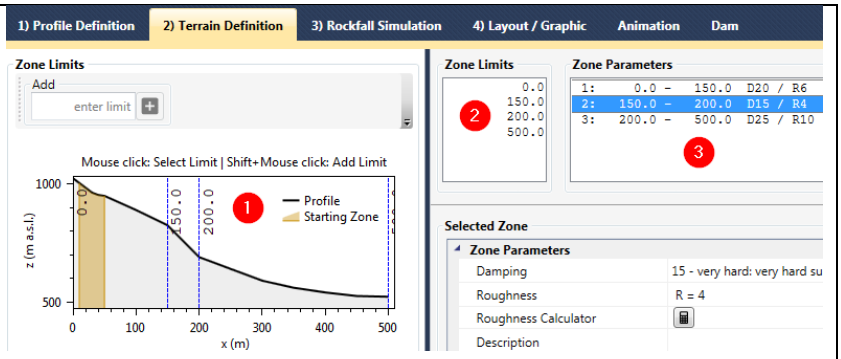
1.2 Profile Definition

1. Examine the profile.
2. Look at the key figures.
3. Look at the starting zone.



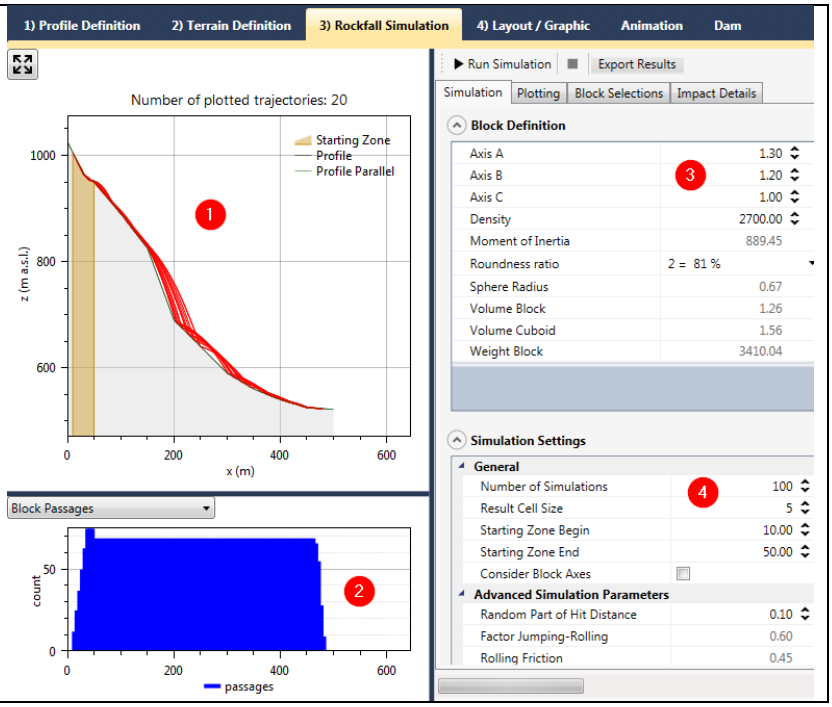
1.3 Terrain Definition

1. Look at overview
2. Examine the zone limits
3. Study the zone parameters. Apparently different damping and roughness values were used. A forest zone was not defined.



1.4 Rockfall Simulation

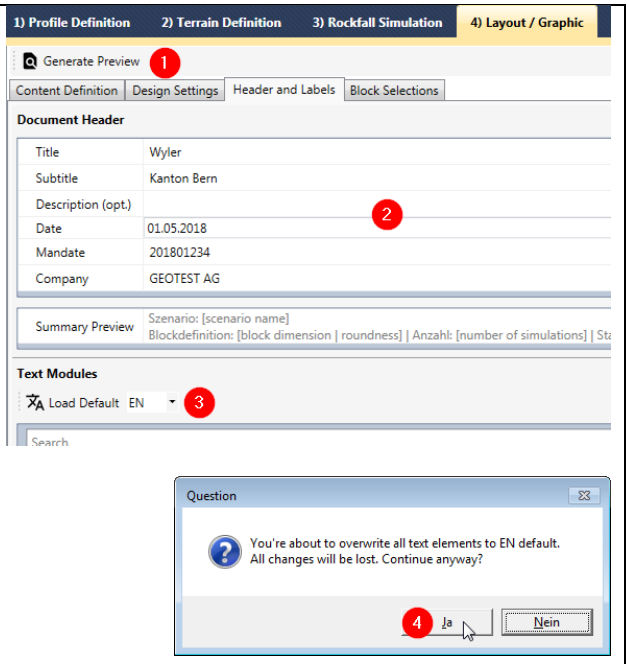
1. Take a look at the simulation result.
2. Study the statistics. For example, how far the blocks got.
3. Look at the block definition.
4. Look at the simulation settings.



1.5 Layout / Graphic

1. Generate the preview, to get an idea of the output document.
2. Check the document header for completeness.
3. Text modules are recorded in German. Change this by choosing “EN” and pressing the button “Load Default”.
4. Confirm the following dialog with “Yes” to overwrite all text modules with the English default.

Generate a new preview.

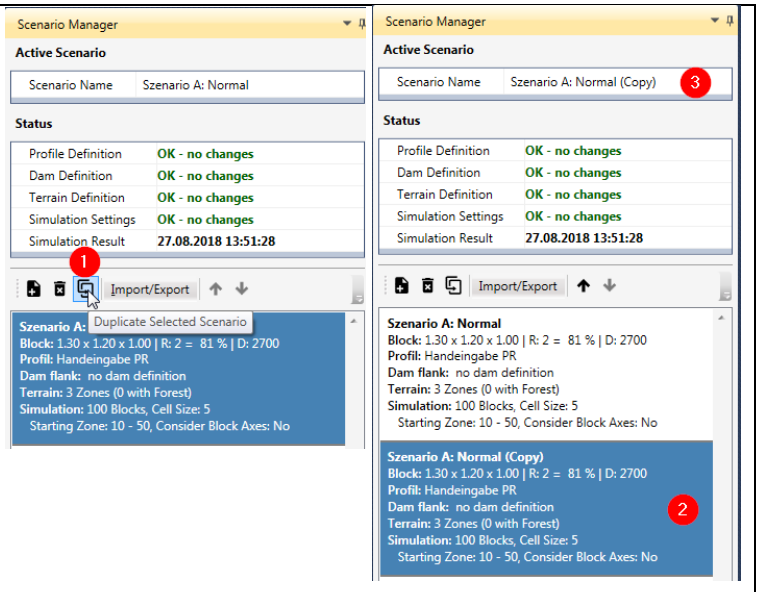


2. “Szenario A” with forest

We now want to copy “Scenario A” and add a forest zone.

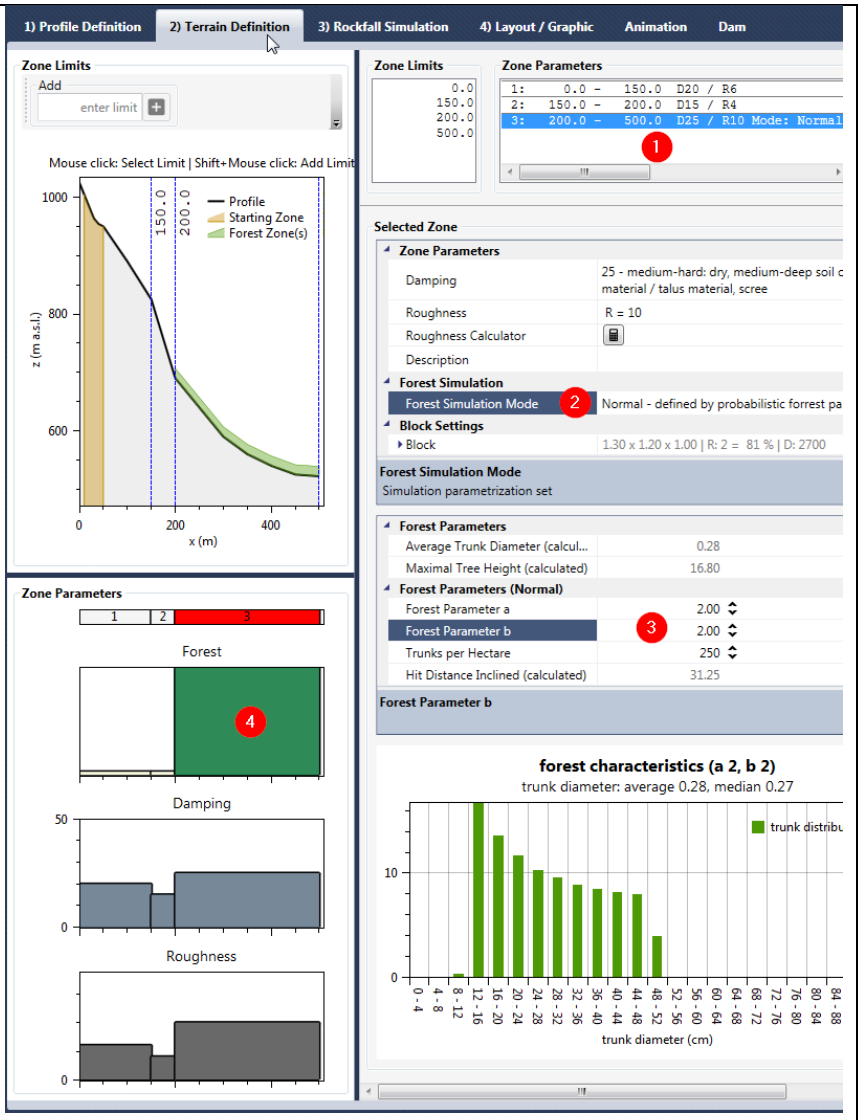
2.1 Copying the scenario

1. Copy “Szenario A”.
2. A copy of the scenario has been added to the scenario manager. “(Copy)” is automatically appended to the scenario name.
3. Change the scenario name to **“Szenario AW: Normal Forest”**



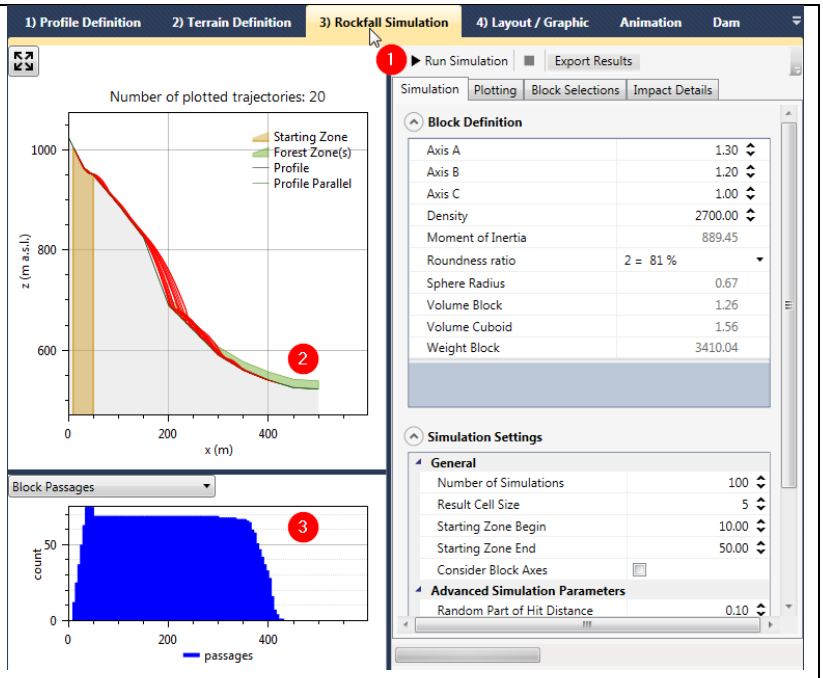
2.2 Adding forest zone

1. Select the third zone (number 3).
2. Set the forest simulation mode to “Normal”.
3. Change the values: a = 2, b = 2, and trunks per hectare = 250
4. The graphic shows the forest zone qualitatively. The forest zone is also drawn into the profile plot.



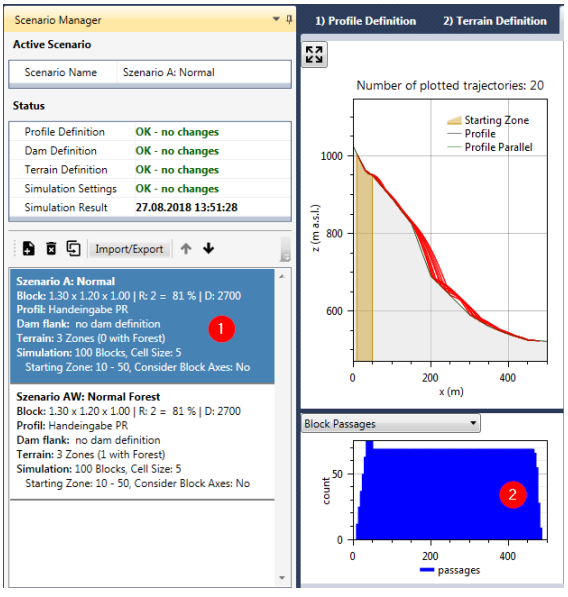
2.3 Simulating rock fall

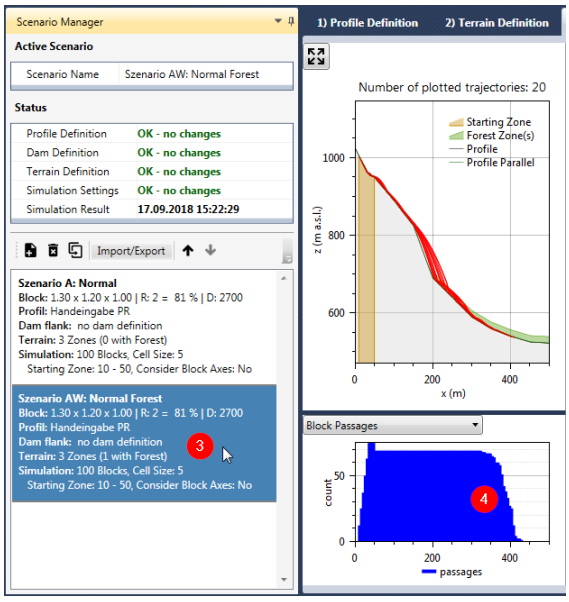
1. Run the simulation.
2. The forest zone appears in the result plot.
3. Look at the block passages plot: the blocks get stopped earlier.



2.4 Compare Scenarios “A” and “AW”

1. Switch to “Szenario A”.
2. Look at the block passages.
3. Switch to “Szenario AW”.
4. Compare the block passages.



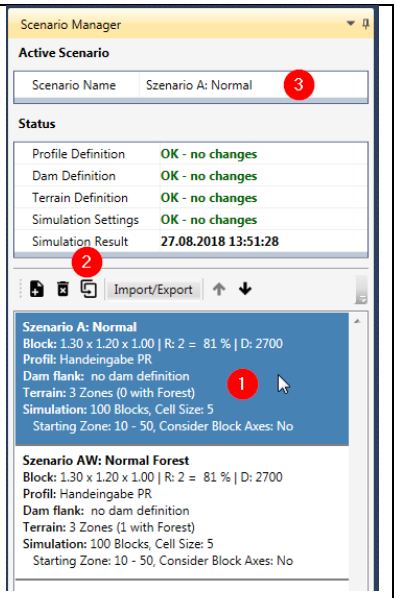


3. “Szenario A” with soft underground

We now want to copy “Scenario A” and add a soft zone with more damping.

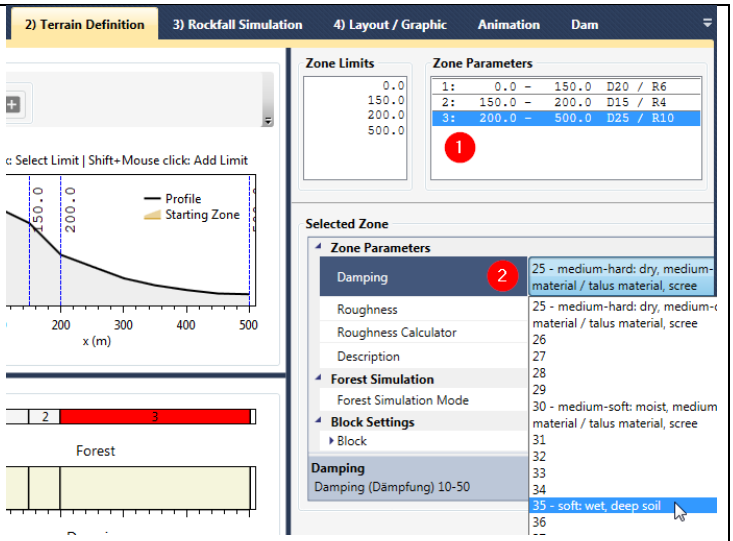
3.1 Copying the scenario

1. Select “Szenario A”.
2. Copy “Szenario A”. A copy of the scenario has been added to the scenario manager. “(Copy)” is automatically appended to the scenario name.
3. Change the scenario name to **“Szenario B: Soft”**



3.2 Editing the damping

1. Select the third zone (number 3).
2. Change the damping to “35”.



3.3 Simulating rock fall

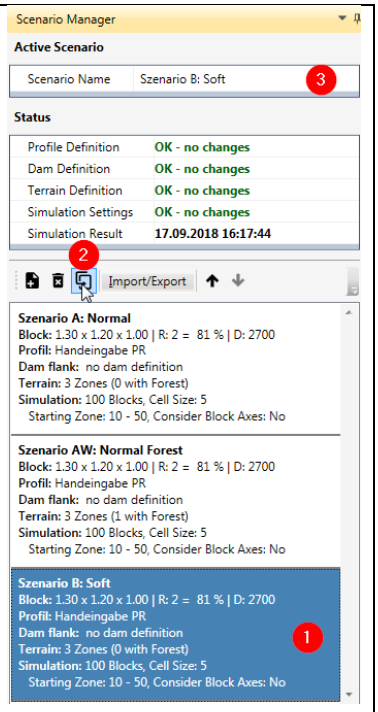
1. Run the simulation.
2. Look at the block passages plot: the blocks get stopped earlier than in “Szenario A”.

4. “Szenario B” with forest

We now want to copy “Scenario B” and add a forest zone.

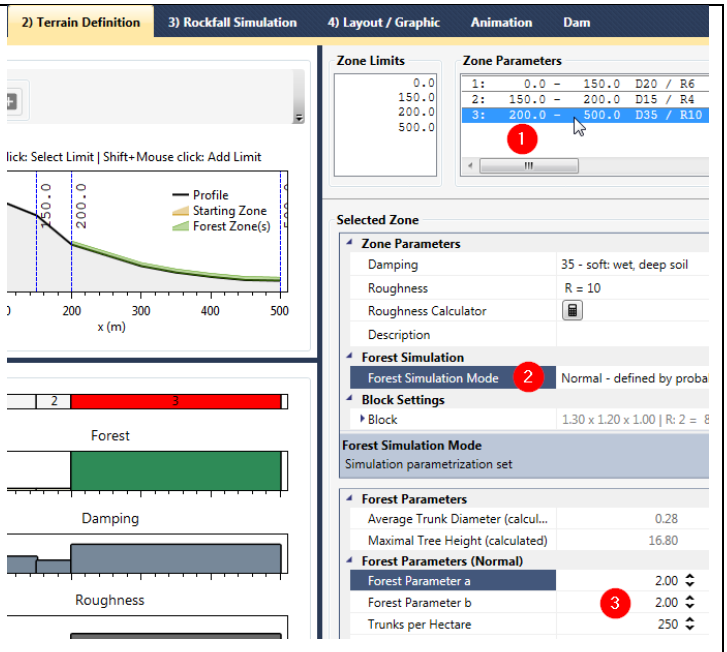
4.1 Copying the scenario

1. Select “Szenario B”.
2. Copy “Szenario B”. A copy of the scenario has been added to the scenario manager. “(Copy)” is automatically appended to the scenario name.
3. Change the scenario name to **“Szenario BW: Soft Forest”**



4.2 Adding forest zone

1. Select the third zone (number 3).
2. Set the forest simulation mode to “Normal”.
3. Change the values:
   a = 2, b = 2, and
   trunks per hectare = 250



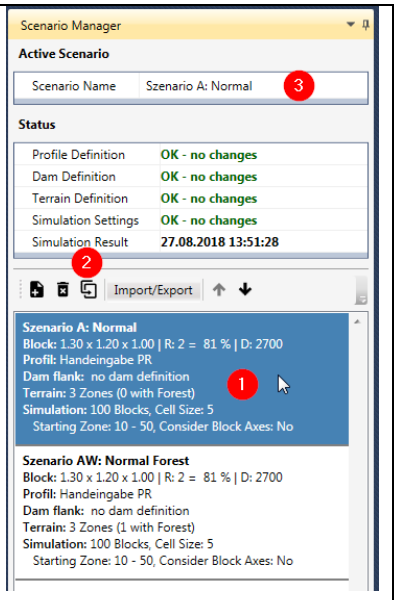
4.3 Simulating rock fall

1. Run the simulation.
2. Look at the block passages plot: the blocks get stopped earlier than in “Szenario B”.

5. “Szenario A” with a protection dam

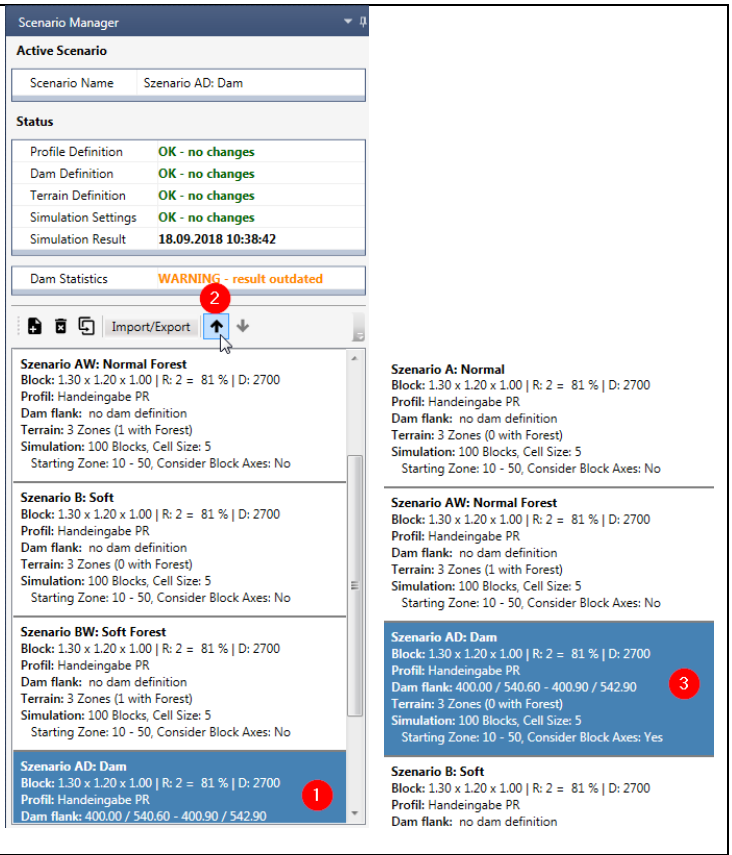
5.1 Copying the scenario

4. Select “Szenario A”.
5. Copy “Szenario A”. A copy of the scenario has been added to the scenario manager. “(Copy)” is automatically appended to the scenario name.
6. Change the scenario name to **“Szenario AD: Dam”**



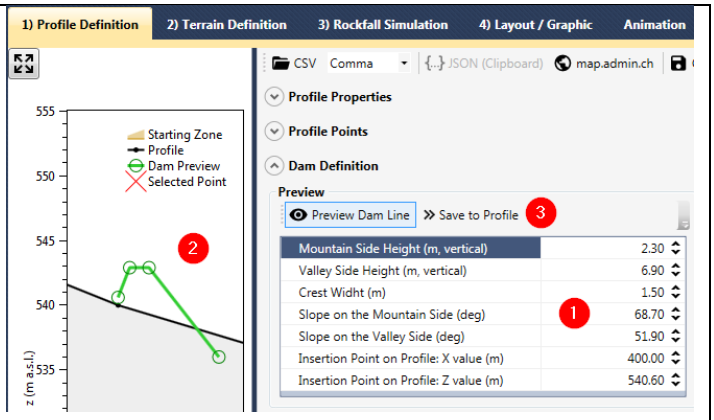
5.2 Arrange scenarios

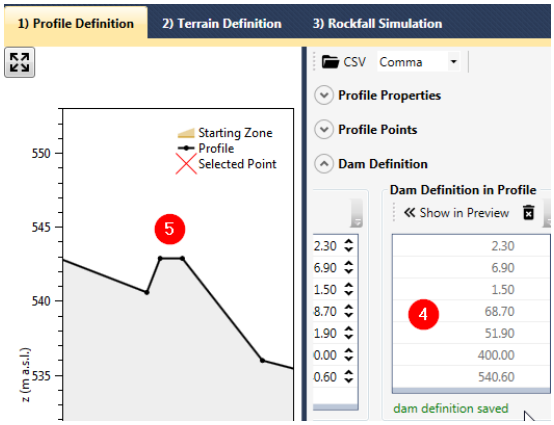
1. Select “Szenario AD”.
2. Click the up arrow twice.
3. “Szenario AD” is now correctly arranged.



5.3 Adding dam to profile

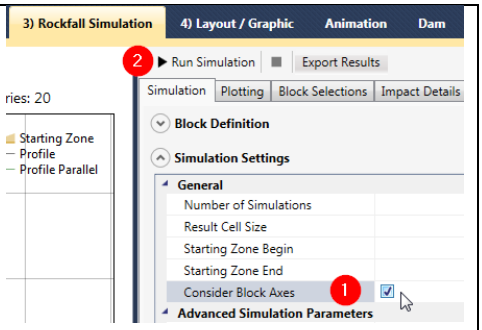
1. Enter the dam dimensions:
   2.3, 6.9, 1.5,
   68.7, 51.9,
   400.0, 540.6
2. The dam preview is shown in green in the plot.
3. Click on “Save to Profile” to save the dam definition
4. The dam definition is saved and displayed on the right.
5. The dam was added to the profile.





5.4 Rockfall simulation

1. Activate “Consider Block Axes” in the simulation settings.
2. Run the rockfall simulation.

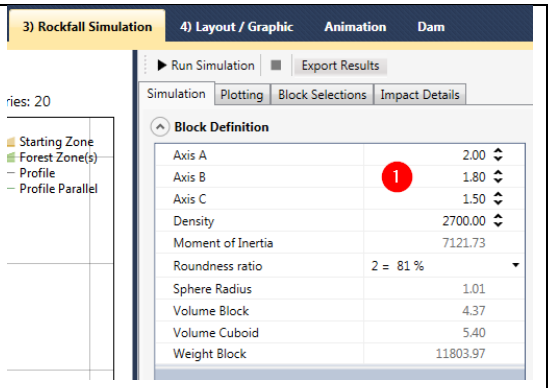


6. Try your own scenario (Optional task)

This task encourages you to create your own scenarios by varying the block size and starting zone. Choose a suitable scenario as the starting point for your experiments. "Szenario AW: Normal Forest" would be one option. After each change, examine how the range and energies of the blocks change.

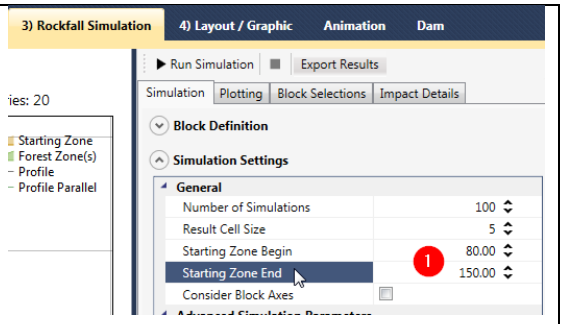
6.1 Suggestion: Vary block size

1. Increase the block size to
   A = 2.0, B = 1.8, C = 1.5



6.2 Suggestion: Change starting zone

1. Change the starting zone limits to
   begin = 80, end = 150



7. Load finished project (Optional task)

If you want to examine the finished project without going through all the steps, you can load the prepared project file.

1. Click “Open” to open an existing project file.
2. Confirm the dialog that warns you that the current project is lost with “Yes”.

Open the project file “**Tutorial2_Demo.pzip**”