

How to generate a white noise spectrum

Below are the steps for generating a white noise spectrum for MIKE 21 BW by using the MIKE 21 Toolbox.

1. First produce a wave spectrum that covers all the frequency values required by using the MIKE 21 tool "Generate Wave Energy Spectrum" (focus on specifying the frequency interval – minimum frequency should be smaller than shown here to investigate seiching).

Frequency Spectrum

Specify Type of Wave Frequency Spectrum

On this page you select the wave frequency spectrum, type of frequency discretization and the number of discrete frequencies.

Frequency Spectrum

☐ Monochromatic waves

☐ Pierson-Moskovitz spectrum

☒ JONSWAP spectrum

☐ TMA spectrum

Frequency Discretization

☒ Constant frequency interval

☐ Constant energy interval

Minimum frequency

Maximum frequency

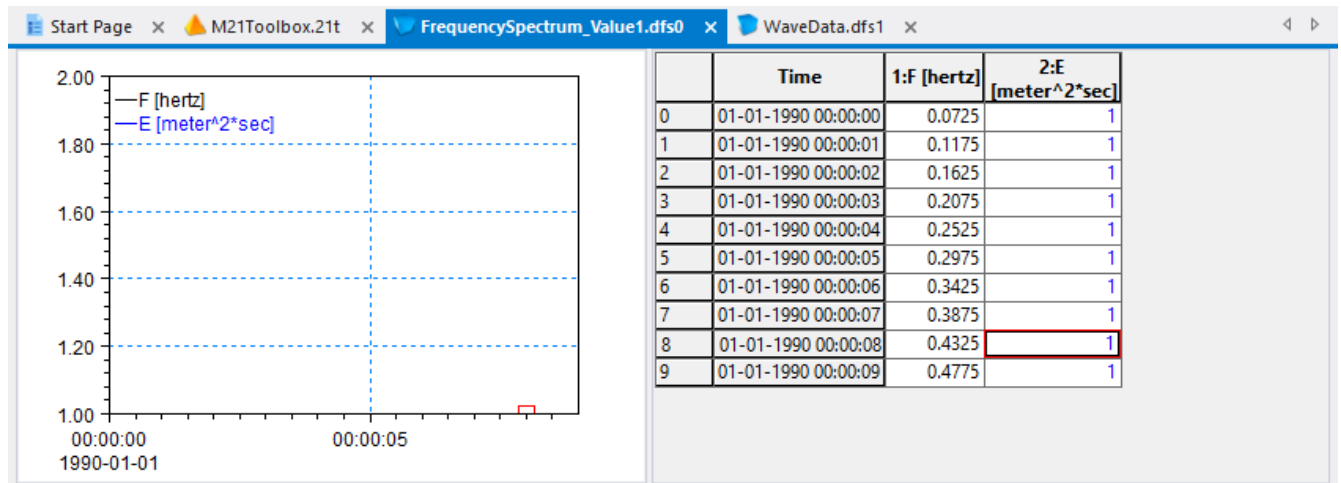
Number of frequencies

NOTE: the minimum and maximum frequency specification is not used if monochromatic waves are selected.

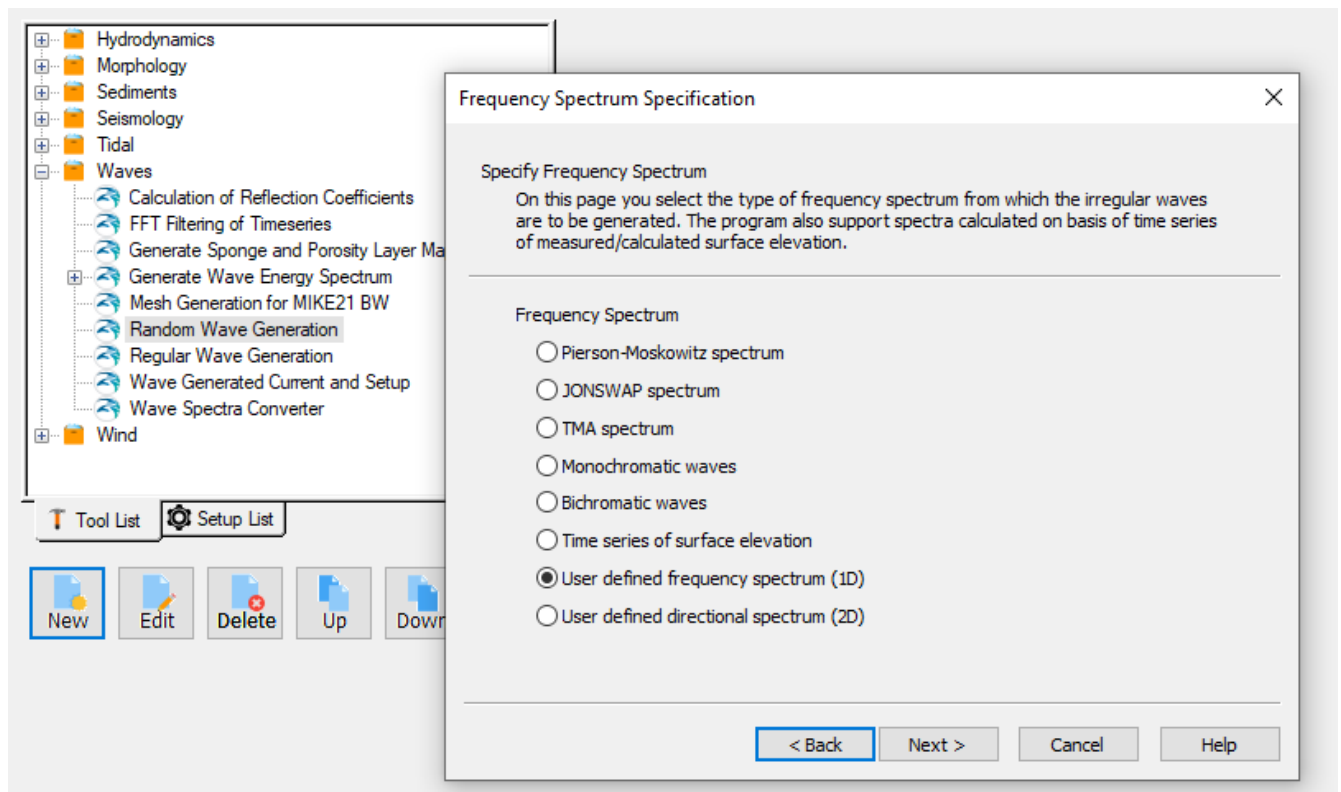
< Back Next > Cancel Help

2. Copy the generated frequency spectrum file to a new file.

3. Open this new file and set all the energy values to the same value, e.g., 1 (or less).



4. Use the MIKE 21 tool "Random Wave Generation" with the modified frequency spectrum file to produce the wave properties for a white noise case.



5. In "Random Wave Generation" you can also select to output the resulting water level at a reference point at the generated boundary in order to evaluate the effect of the chosen energy value.

Reference Point Specification

Reference Point Specification

On this page you specify the number of reference points and their coordinates. The coordinates should be specified relative to the same origin as used for the generation line. You also have to specify the name and title of the output file.

Number of points

1

	X-coord.	Y-coord.
1	12	50

File name

Noise\BoundaryRefPoint_B_01.dfs0

...

Title

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Cancel

Help

6. You can now use the generated dfs1 file directly as input to the BW simulation.