SESAM RELEASE NOTES

WAMOD

Wave Modeller

Valid from program version 2.0



Sesam Release Notes

Wamod

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Valid from Wamod version 2.0

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1 NEW FEATURES

1.1 Support nonlinear regular Stokes 5 and Stream function waves (FEATURE 291302)

New solvers of Stokes and Fenton are supported for nonlinear regular wave based on stokes 5 and Stream function.

NLIN license extension is required for this new feature.

1.2 Support second order analytical wave model for irregular sea states (FEATURE 258800)

The second order wave theory applied in Wamod is based on reduced equations in the Hamiltonian theory of weakly nonlinear surface waves. The solver should be set as SecondOrder and M should be set as 2. The output SWD file by Wamod will contain all the contribution of first and second order.

NLIN license extension is required for this new feature.

1.3 Introduce breaking models to handle very steep waves (FEATURE 291307)

The HOSM equations are energy preserving (and Hamiltonian). Naturally they do not contain any mechanism for dissipation and wave breaking. Hence, for very steep waves where wave breaking plays an important role the solution may be less realistic, or the simulations may even break down due to accumulation of energy at high wavenumbers. This is a typical limitation of all potential flow codes. However, some effects of wave breaking may be included by applying pragmatic models for the wave breaking. While such breaking models cannot describe the complex physics of the actual breaking process, it may in many cases be a quite good model for the overall effects of the breaking in the wave field. The breaking model can be triggered by setting breaking as 5 or 6.

NLIN license extension is required for this new feature.

1.4 Support Torsethaugen wave spectrum, both general and simplified form (FEATURE 291305)

Torsethaugen wave spectrum, both in General and Simplified form recommended in DNV–RP-C205, is supported. The input parameter itype should be set as 4. And if simplified, the extra parameter **simplified** should be set as true.

1.5 Include effects of finite water depth on wave spectrum transformation (FEATURE 290492)

Wamod 1.0 has been assuming deep water dispersion relation for the initialization of Jonswap based wave spectrums. A new extra parameter is introduced to cover the effect of finite water depth on Jonswap based wave spectrums:

jonswap_fmt=1

! 1(default): Use Jonswap-omega-spectrum with correct and consistent dispersion relation considering the effect of finite depth.

! 2: Use Jonswap-omega-spectrum based on deep water dispersion relation even on finite depth, same as Wamod 1.0 which uses Jonswap-k-spectrum. This option will be applied if water depth h is not set or set as -1, i.e. infinite water depth.

! 3: Correct and consistent transformation of finite depth TMA spectrum. If the parameter of TMA (only available in Wamod 1.0) is set as true, jonswap_fmt will be reset as 3 for itype = 1 or 5. TMA spectrum or jonswap_fmt as 3 is not allowed for Torsethaugen wave spectrum.

2 BUG FIXES

2.1 WAMOD command line /INTERFACE=LINE does not work as expected (BUG 278513)

wamod.exe ***.inp /INTERFACE=LINE should be able to shelter the pop-up windows.

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