SWAN (Simulating WAves Nearshore)

SWAN is a third-generation wave model which computes random, short-crested wind-generated waves in coastal regions and inland waters. It is fully spectral in frequencies and directions.

SWAN accounts for the following physics:
- wave propagation, shoaling, refraction due to current and depth;
- wave generation by wind;
- three- and four-wave interactions;
- white capping, bottom friction, and depth-induced breaking;
- wave induced set-up;
- transmission through and reflection from obstacles;
- wave diffraction.

SWAN computations can be made on a regular, curvi-linear or unstructured grid in a cartesian or spherical co-ordinate system. The use of nested runs allows for higher resolutions in the area of interest.

SWAN provides among others the following output :
- one- and two-dimensional spectra;
- significant wave height and mean wave period;
- average wave direction and directional spreading;
- one- and two-dimensional spectral source terms;
- wave-induced force and set-up.

Svašek Hydraulics has linked SWAN directly to the hydrodynamic model FINEL2D and to the morphological package MORFIN.

Developer
Delft University of Technology

Main features
Wave propagation, wave generation by wind, wave breaking, refraction, white capping, bottom friction, fully spectral in frequencies and directions

Version
Latest available version

More information
http://vlm089.citg.tudelft.nl/swan/index.htm

SVASEK
HYDRAULICS
COASTAL, HARBOUR AND RIVER CONSULTANTS