*This is a version documentation of the WAM6-GPU.*

*version 1.0: Details about the WAM6-GPU v1.0 can be referred to*

*https://egusphere.copernicus.org/preprints/2024/egusphere-2024-169/, as well as README\_WAM6-GPU\_compilation\_usage.pdf.*

*Version 1.1: Include OpenACC support for nesting and single-point wave output. Now the WAM6-GPU can using executable 'ptime' to output integrated parameters at a list of output points using GPU version. Nesting cases can run on multiple GPUs. How to set up a nesting case please refer to nestcase\_readme.docx in the root directory.*

*Version 1.2: Improvement on SNONLIN\_OPENACC nonlinear wave interaction. an subroutine SNONLIN\_OPENACCv4 is used to further lower the time usage; Fixed some OpenACC coding bugs, especially some indexes errors, wind-swell separation, and radiation stress computation.*

*Version 1.2.1: bug fix (mpi\_gather\_spp\_openacc: collapse (2) => collapse(3)*

*Version 1.3: When modeling typhoon waves, wave height close to the typhoon center is much higher than observations. In analogy with ECWAM, the maximum spectral steepness is manipulated by imposing a limitation to the high frequency part of the spectrum based on a limiting Phillips spectrum. Refer to IFS documentation Cy46r1 PART VII: ECMWF WAVE MODEL Page22, Section 3.2.7 for detail. ALPHAPMAX = 0.031 in wam\_source\_model.F90 is tunable for this overestimation. Generally, for WAM6 simulation is sensitive to parameters such as taushelter, betamax, and ALPHAPMAX.*