

Change Log for CMS v4.00:

Revision 14 – 6/27/2012

- Bug fix - Fixed cdWndvolp calculation for Lagrangian winds.
- Bug fix - Variable sqrttwo not defined properly.
- Change - Initial guess of roller energy is set to the previous time step instead of zero and converges much faster.
- New feature - Added output for fraction of broken waves and wave dissipation coefficient.
- Change - Modified incipient wave breaking.

Revision 13 – 6/18/2012

- Change – Modified representative bottom orbital velocity calculations using parametric method based on JONSWAP spectrum
- Change – Modified bottom friction calculation for all bottom friction formulations except quadratic.
- New feature - Added card MORPH_START_TIME which replaces CALC_MORPH_DURING_RAMP
- New feature - Added GM79 and DSK88 bed friction formulations
- Maintenance - Verified Soulsby-van Rijn transport formula with example case from Soulsby 1997
- Maintenance - Verified GM79 bed friction formulation using example from Soulsby 1997
- New feature - Added bed-correction to Soulsby-van Rijn transport formula
- Change - Simplified wall friction formulation to avoid iterative solution
- New features - Added curvature to hydrodynamic simulation statistics

Revision 12 – 5/22/2012

- Bug fix - Hot start failed to write to hotstart file after starting from hotstart file.
- New Feature - Save Point files instead of Observation Cells. Ensured this works with Hot Starts (SMS 11.1+)
- Change = Modified HYDRO_TIMESTEP, DURATION_RUN, DURATION_RAMP to be able to read time units.

Revision 11

- Change - Set default output file names for each group to group names instead of solution file (SMS 11.1+)
- Change - Added cards to turn on/off specific output variables (SMS 11.1+)
- Bug fix - Fixed ascii output of current velocity
- Maintenance - Cleaned up prestart, read_card_file, and others
- New Feature - Added Quasi-3D module to calculate 3D dispersion terms (Future implementation)
- Change - Modified cards for wave mass flux velocity and roller flux

Revision 10

- Change - Removed coefficient calculation for v-momentum equation, except at boundary cells
- Change - Added static source terms for momentum and salinity
- New Feature - Added second-order temporal scheme

- New Feature - Added GAMMA, CUBISTA, ALSMART, and HOAB advection schemes
- Change - Optimized deferred corrections
- Change - Improved output display screen
- New Features - Added rubble mound, culverts, and weirs from Weiming's code.

Revision 9

- Bug fix - Removed average current velocity output in sim_stats causing error
- Change - Units of sediment transport from m^2/s to $kg/m/s$
- Maintenance - Removed unused variable struct from code
- Change - Removed positive and negative sediment transport rates from statistics
- Change - Added statistics output for maximum sediment transport rates
- Change - Added statistics output for total-load concentration norm residuals

Revision 8 – 1/25/2012

- Change - Changed variable time step settings (more conservative).
- Bug fix - Reordered convergence IF statements in CMS_Flow.
- Bug fix - Removed mean current velocities from simulation statistics (not presently used).
- Bug fix - Changed sign of "Stokes forcing" term in momentum equation (negligible effect).
- Bug fix - Removed "wccg" reference in roller and replaced with wccg2 (wccg2 created by Alex).
- Bug fix - Added reinitialization of "tmultw" in recalculate (to properly recover from crashes).
- Change - Added "cdflux1" variable to be used in recalculate and update (more consistent).
- Bug fixes - Several bug fixes reported by Earl Hayter for CMS-Wave (EJH).
- Bug fix - Added code to not allow "vis=0.0" at dry cells (EJH).
- Maintenance - Removed old code for reading NCCHE type input ASCII files.
- Bug fix - Divide by zero in "sed_betat" for dry cells due to zero viscosity.
- Change - Reintroduced the wave ASCII output for use with PTM.

Revision 7

- Bug Fix – Replaced "wucapac" transport formula.

Revision 6

- Bug Fix - Bug fix for multiple XMDF output files. Files are deleted before for coldstarts.
- Bug Fix - Wind linear interpolation coefficient changed to avoid extrapolation.
- Bug Fix - Changed observation station output format to F9.4 so that dry cells write -999 for water elevation.
- Bug Fix - Increased tolerance for output in "check_time_list" to avoid skipping output times.
- Change - Increased interval for sediment transport screen print from 5 to 10.

Revisions 1 - 5

- New feature - Hybrid solver using both GMRES and Gauss-Seidel.
- New feature - Hydro statistics are used to check for model divergence. (Each outer loop iteration)

- New feature - Multiple X MDF output files for each variable group.
- New feature - Display time step statistics.
- Change - Variable time stepping algorithm.
- Bug Fix - NaN wind drag coefficient produced for zero wind speed.