

Load case implementation and Autogeneration of inputfiles

$$f(x+\Delta x) = \sum_{i=0}^{\infty} \frac{(\Delta x)^i}{i!} f^{(i)}(x)$$

$$\int_a^b \Theta + \Omega \int \delta e^{i\pi} =$$

$$\infty = [2.7182818284]$$

$$\chi^2 \gg ,$$

$$\sum!$$

Risø DTU
National Laboratory for Sustainable Energy

Excel Spreadsheet

Name	Date modified	Type	Size
animation	30-09-2011 16:26	File folder	
control	30-09-2011 16:26	File folder	
control_nrel	30-09-2011 16:27	File folder	
data	30-09-2011 16:27	File folder	
eigenfreq	30-09-2011 16:27	File folder	
htc	30-09-2011 16:27	File folder	
htc_hydro	30-09-2011 16:27	File folder	
logfiles	30-09-2011 16:27	File folder	
res	30-09-2011 16:27	File folder	
simulation_nc	30-09-2011 16:27	File folder	
turb	30-09-2011 16:25	File folder	
anisotropic_3d	17-01-2011 14:05	DLL File	32 KB
Animation_eigenfreq.exe	08-07-2008 15:39	Application	1,840 KB
Animation_time_simulation.exe	10-07-2009 12:07	Application	1,869 KB
DFORMD.DLL	20-06-2001 03:11	DLL File	448 KB
DFORMD0.DLL	20-06-2001 03:11	DLL File	448 KB
DFORRT.DLL	20-06-2001 03:10	DLL File	440 KB
ncnorm.nrl	30-06-2001 03:10	NCI File	400 KB



Name	Date modified	Type	Size
htc_iec	30-09-2011 16:28	File folder	
htc_master	30-09-2011 16:28	File folder	
logfiles_iec	30-09-2011 13:30	File folder	
res_iec	30-09-2011 13:30	File folder	
turb_iec	30-09-2011 13:29	File folder	
Hawc2_IEC0400-1ed3_afulsim	30-09-2011 13:11	Microsoft Office E...	217 KB
Hawc2Bat.BAT	30-09-2011 15:03	Windows Batch File	15 KB

Spreadsheet input 1



Main data for HAWC calculation	
Path to master folder	C:\Users\andy\Desktop\HAWC2_kursus\HAWC2_course_oct_2011\hawc2_model
Master folder:	simulation_jec
Model rar file:	
Prefix:	
Name of htc folder:	htc_jec
Name of turbulence folder:	turb_jec
Name of wake turbulence folder:	
Name of meander turbulence folder:	
Name of result directory folder:	
Name of log folder:	
HAWC version:	HAWC2MB
user name:	andy
Pigbed:	
Path to Pigbed:	
Copy Back turbulence:	1=copy back, 0=dont
Do not use the danish letters æ,ø,å in the input data	
Do not use blanks characters in file of directory names	
All directories including empty(htc,turb,res)files must be present in the packed rar file	

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Spreadsheet input 2



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Spreadsheet input 3



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The format for the master.htc file

 DTU

```

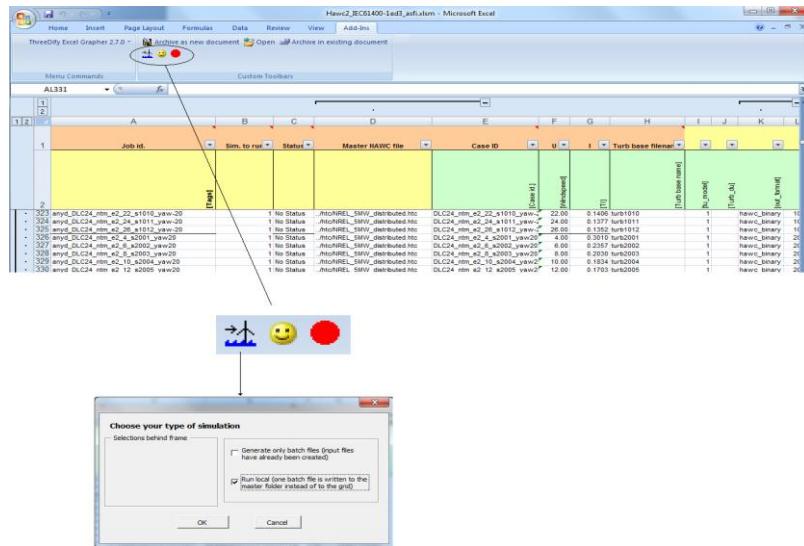
begin Simulation;
  time_stop [time stop];
  solvertype 1; (newmark)
  on_no_convergence continue;
  logfile ./logfiles_iec/[Case id.].log ;
; animation ./animation/[Case id.].dat;
;
begin newmark;
  deltat 0.02;
end newmark;
end simulation;
;
begin new_htc_structure;
beam_output_file_name ./logfiles/[Case id.]_beam.dat;          Optional - Calculated beam
properties of the bodies are written to file
body_output_file_name ./logfiles/[Case id.]_body.dat;          Optional - Body initial position
and orientation are written to file
; body_eigenanalysis_file_name ./eigenfrq/[Case id.]_body_eigen.dat;
; structure_eigenanalysis_file_name ./eigenfrq/[Case id.]_strc_eigen.dat;
;
-----
begin main_body;      tower 87m
  name   tower ;
  type   timoschenko ;
  nbodies 1 ;

```

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Generation of HTC's & Bat file



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Quick guide

1. Sheet: Main

Enable macros. Set all necessary folder names to match your directories of the hawc2 folder (path to master folder has to end with /)

2. Sheet: input

If covering the IEC61400-1 Load basis insert all values in the green cells from the standard. Click  to generate the load cases in the sheet loadcases

3. Sheet: Loadcases

Check all inputs and if you wish to remove any load cases clear the cells in row "Sim. to run". Click  to generate all HTC-input files and the batch file. Mark "run local" and click "ok". (jobs after an empty field in the "Job id." Will not be run)

- remember to set decimal symbol to . in Windows (Control Panel\Clock, Language, and Region\Change the date, time, or number format\Format\additional settings)

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Exercise

- **Ex1 Generate HTC & Bat - files**

- Generate all the HTC-files from the load case basis and a Batch file (skip step 2)
- Check some of HTC-files and see if the right values are inserted?
- Run a load case in HAWC2
 - Start command prompt in simulation_iec folder: hawc2mb htc_iec\“loadcase name” or tab to browse files
- Make initial assessments of results using windap, does the results make sense?

- **Ex2 Run a bat file**

- Create a bat-file containing the 3 first loadcases and run it in HAWC2.
- (move the bat-file to the main folder and add the directory simulation_iec\ to the path files)

- **Ex3 Make a parameter study of own choice**

- Generate a new set of the loadcases with new parameters of your own choice (this can be damping parameter,turbulence intensity, wind direction)
- Make assessments of the results using windap.

Running HAWC2 on a cluster (thyra)

