

Model set-up

```
xbm = xb_generate_model(  
    'bathy',      {'x', x, 'y', y, 'z', z, ... },  
    'waves',     {'Hm0', Hm0, 'Tp', Tp, ... },  
    'tide',      {'front', 5, 'back', 5, ... },  
    'wavegrid',  {'nbins', 5, ... },  
    'settings',  {'tstop', 2000, 'random', 0, ... }  
}
```

Running a model

```
xbr = xb_run(xbm, ... )  
xbr = xb_run(xbm, 'path', 'c:\')  
xbr = xb_run(xbm, 'path', 'c:\', 'binary', 'c:\xbeach.exe')  
xbr = xb_run(xbm, ... , 'nodes', 4)  
xbr = xb_run(xbm, ... , 'netcdf', true)  
  
xbr = xb_run_remote(xbm, ... )  
xbr = xb_run_remote(xbm, 'path_local', 'p:\', 'path_remote', '/p/')  
xbr = xb_run_remote(xbm, 'ssh_user', ' ... ', 'ssh_pass', ' ... ')  
xbr = xb_run_remote(xbm, 'ssh_prompt', true)  
xb_setpref('ssh_user', ' ... ', 'ssh_pass', ' ... ')  
  
xb_run_queue(xbm, ... )  
xb_run_queue(xbm, 'options', { ... })  
xb_run_queue(xbm, 'options', {'binary', 'c:\xbeach.exe'})  
xb_run_queue  
xb_run_queue('action', 'next')  
xb_run_queue('action', 'clear')
```

Reading model output

```
xbo = xb_read_output(xbr, ... )  
xbo = xb_read_output(xbr, 'vars', {'zb' 'H'})  
xbo = xb_read_output(xbr, 'vars', {'*_mean'})  
xbo = xb_read_output(xbr, 'vars', {'/\d+$'})  
  
xbo = xb_read_output(xbr, 'vars', { ... }, 'start', 10, 'length', 1)  
xbo = xb_read_output(xbr, 'vars', { ... }, 'start', [10 2])  
xbo = xb_read_output(xbr, 'vars', { ... }, 'stride', 10)  
xbo = xb_read_output(xbr, 'vars', { ... }, 'index', [1 10 100])  
  
xbo = xb_read_output('c:\', ... )  
xbo = xb_read_output('xboutput.nc', ... )
```

Analyzing model output

```
xba = xb_get_hydro(xbo, 'fsplit', 0.05, ... )  
xba = xb_get_morpho(xbo, 'level', 5, ... )  
xba = xb_get_spectrum(timeseries, 'sfreq', 1, 'fsplit', 0.05, ... )  
[xc yc] = xb_get_coastline(x, y, z, ' ... ')
```

Visualization

```
xb_view(xbm)  
xb_view(xbo)  
xb_view(xbr)  
xb_view('c:\')  
  
xb_plot_profile(xbo, 'measured', ..., 'durosta', ..., 'BSS', true, ...)  
xb_plot_hydro(xba, 'Hrms_hf', ..., 'Hrms_lf', ..., ...)  
xb_plot_morpho(xba, 'dz', ..., 'sed', ..., 'ero', ..., ...)  
xb_plot_spectrum(xba, 'measured', ...)
```

The XBeach Structure

```
xb_show(xb)  
  
xb = xb_set([], 'zb', ... )  
xb = xb_set(xb, 'zs', ... )  
xb = xb_set(xb, 'H', ... , 'h', ... )  
  
zs = xb_get(xb, 'zs')  
[zb zs] = xb_get(xb, 'zb', 'zs')  
  
xb = xb_peel(xb)  
xb = xb_join(xb1, xb2)
```

XBeach preferences

```
xb_setpref('dat_method', 'read')  
xb_setpref('dat_method', 'memory')  
  
xb_setpref('interactive', true)  
xb_setpref('grid_finalise', { ... })  
xb_setpref('ssh_user', ' ... ')  
xb_setpref('ssh_pass', ' ... ')  
xb_setpref('interval', 10)  
  
ssh_user = xb_getpref('ssh_user')  
  
xb_defpref;
```