

# OceanModifier(Modifier)

base classes — [bpy\\_struct](#), [Modifier](#)

**class** bpy.types.OceanModifier(Modifier)

Simulate an ocean surface

## bake\_foam\_fade

How much foam accumulates over time (baked ocean only)

### TYPE:

float in [0, inf], default 0.98

## choppiness

Choppiness of the wave's crest (adds some horizontal component to the displacement)

### TYPE:

float in [0, inf], default 1.0

## damping

Damp reflected waves going in opposite direction to the wind

### TYPE:

float in [0, 1], default 0.5

## depth

Depth of the solid ground below the water surface

### TYPE:

float in [-inf, inf], default 200.0

## fetch\_jonswap

This is the distance from a lee shore, called the fetch, or the distance over which the wind blows with constant velocity. Used by 'JONSWAP' and 'TMA' models.

### TYPE:

float in [0, inf], default 120.0

## filepath

Path to a folder to store external baked images

### TYPE:

string, default "", (never None)

## foam\_coverage

Amount of generated foam

### TYPE:

float in [-inf, inf], default 0.0

## foam\_layer\_name

Name of the vertex color layer used for foam

### TYPE:

string, default "", (never None)

**frame\_end**

End frame of the ocean baking

**TYPE:**

int in [-inf, inf], default 250

**frame\_start**

Start frame of the ocean baking

**TYPE:**

int in [-inf, inf], default 1

**geometry\_mode**

Method of modifying geometry

- `GENERATE` Generate – Generate ocean surface geometry at the specified resolution.
- `DISPLACE` Displace – Displace existing geometry according to simulation.

**TYPE:**

enum in ['GENERATE', 'DISPLACE'], default 'GENERATE'

**invert\_spray**

Invert the spray direction map

**TYPE:**

boolean, default False

**is\_cached**

Whether the ocean is using cached data or simulating

**TYPE:**

boolean, default False, (readonly)

**random\_seed**

Seed of the random generator

**TYPE:**

int in [0, inf], default 0

**repeat\_x**

Repetitions of the generated surface in X

**TYPE:**

int in [1, 1024], default 1

**repeat\_y**

Repetitions of the generated surface in Y

**TYPE:**

int in [1, 1024], default 1

**resolution**

Resolution of the generated surface for rendering and baking

**TYPE:**

int in [1, 1024], default 7

**sharpen\_peak\_jonswap**

Peak sharpening for 'JONSWAP' and 'TMA' models

**TYPE:**

float in [0, 1], default 0.0

**size**

Surface scale factor (does not affect the height of the waves)

**TYPE:**

float in [0, inf], default 1.0

**spatial\_size**

Size of the simulation domain (in meters), and of the generated geometry (in BU)

**TYPE:**

int in [-inf, inf], default 50

**spectrum**

Spectrum to use

- `PHILLIPS` Turbulent Ocean – Use for turbulent seas with foam
- `PIERSON_MOSKOWITZ` Established Ocean – Use for a large area, established ocean (Pierson-Moskowitz method).
- `JONSWAP` Established Ocean (Sharp Peaks) – Use for established oceans ('JONSWAP', Pierson-Moskowitz method) with peak sharpening
- `TEXEL_MARSEN_ARSLOE` Shallow Water – Use for shallow water ('JONSWAP', 'TMA' - Texel-Marsen-Arsloe method).

**TYPE:**

enum in ['PHILLIPS', 'PIERSON\_MOSKOWITZ', 'JONSWAP', 'TEXEL\_MARSEN\_ARSLOE'], default 'PHILLIPS'

**spray\_layer\_name**

Name of the vertex color layer used for the spray direction map

**TYPE:**

string, default "", (never None)

**time**

Current time of the simulation

**TYPE:**

float in [0, inf], default 1.0

**use\_foam**

Generate foam mask as a vertex color channel

**TYPE:**

boolean, default False

**use\_normals**

Output normals for bump mapping - disabling can speed up performance if it's not needed

**TYPE:**

boolean, default False

**use\_spray**

Generate map of spray direction as a vertex color channel

**TYPE:**

boolean, default False

### **viewport\_resolution**

Viewport resolution of the generated surface

#### **TYPE:**

int in [1, 1024], default 7

### **wave\_alignment**

How much the waves are aligned to each other

#### **TYPE:**

float in [0, 1], default 0.0

### **wave\_direction**

Main direction of the waves when they are (partially) aligned

#### **TYPE:**

float in [-inf, inf], default 0.0

### **wave\_scale**

Scale of the displacement effect

#### **TYPE:**

float in [0, inf], default 1.0

### **wave\_scale\_min**

Shortest allowed wavelength

#### **TYPE:**

float in [0, inf], default 0.01

### **wind\_velocity**

Wind speed

#### **TYPE:**

float in [-inf, inf], default 30.0

### **classmethod bl\_rna\_get\_subclass(id, default=None)**

#### **PARAMETERS:**

**id** (*str*) – The RNA type identifier.

#### **RETURNS:**

The RNA type or default when not found.

#### **RETURN TYPE:**

`bpy.types.Struct` subclass

### **classmethod bl\_rna\_get\_subclass\_py(id, default=None)**

#### **PARAMETERS:**

**id** (*str*) – The RNA type identifier.

#### **RETURNS:**

The class or default when not found.

#### **RETURN TYPE:**

type

## **Inherited Properties**

- `bpy_struct.id_data`
- `Modifier.name`
- `Modifier.type`
- `Modifier.show_viewport`
- `Modifier.show_render`
- `Modifier.show_in_editmode`
- `Modifier.show_on_cage`
- `Modifier.show_expanded`
- `Modifier.is_active`
- `Modifier.use_pin_to_last`
- `Modifier.is_override_data`
- `Modifier.use_apply_on_spline`
- `Modifier.execution_time`
- `Modifier.persistent_uid`

## Inherited Functions

- `bpy_struct.as_pointer`
- `bpy_struct.driver_add`
- `bpy_struct.driver_remove`
- `bpy_struct.get`
- `bpy_struct.id_properties_clear`
- `bpy_struct.id_properties_ensure`
- `bpy_struct.id_properties_ui`
- `bpy_struct.is_property_hidden`
- `bpy_struct.is_property_overridable_library`
- `bpy_struct.is_property_readonly`
- `bpy_struct.is_property_set`
- `bpy_struct.items`
- `bpy_struct.keyframe_delete`
- `bpy_struct.keyframe_insert`
- `bpy_struct.keys`
- `bpy_struct.path_from_id`
- `bpy_struct.path_resolve`
- `bpy_struct.pop`
- `bpy_struct.property_overridable_library_set`
- `bpy_struct.property_unset`
- `bpy_struct.type_recast`
- `bpy_struct.values`
- `Modifier.bl_rna_get_subclass`
- `Modifier.bl_rna_get_subclass_py`