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# Itasc(IKParam)

base classes — `bpy_struct`, `IKParam`

**class** bpy.types.**Itasc(IKParam)**

Parameters for the iTaSC IK solver

**damping_epsilon**

Singular value under which damping is progressively applied (higher values produce results with more stability, less reactivity)

**TYPE:**

float in [0, 1], default 0.0

**damping_max**

Maximum damping coefficient when singular value is nearly 0 (higher values produce results with more stability, less reactivity)

**TYPE:**

float in [0, 1], default 0.0

**feedback**

Feedback coefficient for error correction, average response time is 1/feedback

**TYPE:**

float in [0, 100], default 0.0

**iterations**

Maximum number of iterations for convergence in case of reiteration

**TYPE:**

int in [0, 1000], default 0

**mode**

- `ANIMATION` Animation – Stateless solver computing pose starting from current action and non-IK constraints.
- `SIMULATION` Simulation – State-full solver running in real-time context and ignoring actions and non-IK constraints.

**TYPE:**

enum in [‘ANIMATION’, ‘SIMULATION’], default ‘ANIMATION’

**precision**

Precision of convergence in case of reiteration

**TYPE:**

float in [0, 0.1], default 0.0

**reiteration_method**

Defines if the solver is allowed to reiterate (converge until precision is met) on none, first or all frames

- `NEVER` Never – The solver does not reiterate, not even on first frame (starts from rest pose).
- `INITIAL` Initial – The solver reiterates (converges) on the first frame but not on subsequent frame.
- `ALWAYS` Always – The solver reiterates (converges) on all frames.

**TYPE:**

enum in [‘NEVER’, ‘INITIAL’, ‘ALWAYS’], default ‘NEVER’

**solver**

Solving method selection: automatic damping or manual damping

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- `SDLS` SDLS – Selective Damped Least Square.
- `DLS` DLS – Damped Least Square with Numerical Filtering.

**TYPE:**

enum in [‘SDLS’, ‘DLS’], default ‘SDLS’

**step_count**

Divide the frame interval into this many steps

**TYPE:**

int in [1, 50], default 0

**step_max**

Higher bound for timestep in second in case of automatic substeps

**TYPE:**

float in [0, 1], default 0.0

**step_min**

Lower bound for timestep in second in case of automatic substeps

**TYPE:**

float in [0, 0.1], default 0.0

**translate_root_bones**

Translate root (i.e. parentless) bones to the armature origin

**TYPE:**

boolean, default False

**use_auto_step**

Automatically determine the optimal number of steps for best performance/accuracy trade off

**TYPE:**

boolean, default False

**velocity_max**

Maximum joint velocity in radians/second

**TYPE:**

float in [0, 100], default 0.0

**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.

The class or default when not found.

**RETURN TYPE:**

type

## Inherited Properties

- bpy_struct.id_data
- IKParam.ik_solver

## 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
- IKParam.bl_rna_get_subclass
- IKParam.bl_rna_get_subclass_py

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