## **PWWPatch** Zone version\_number\_major : 1 name: *str* number: *int* version\_number\_minor : 0 is\_structured : boolean calc\_thickness\_noise: boolean has\_loading\_data: boolean has\_iblank : boolean float\_type : 'single' centered\_type : { 'node' geometry\_header\_length: int 'face'} loading\_header\_length: int units\_string : str geometry : None geometry\_type : { 'geometry', loading : None \_\_str\_\_() \_set\_string() geometry\_time\_type : { 'constant', 'periodic', 'aperiodic'} loading\_time\_type : { 'constant', 'periodic', 'aperiodic'} StructuredZone loading\_data\_type : { 'surf\_pressure', 'surf\_loading\_vector', iMax: *int* 'flow\_params' jMax: *int* loading\_ref\_frame : { 'ground\_fixed', geometry\_info\_str: str 'mixed\_frame', 'blade\_fixed'} geometry\_name : str geometry : {StructuredConstantGeometry, geometry\_comment : str StructuredAperiodicGeometry, StructuredPeriodicGeometry} loading\_comment : str geometry\_format\_string : list of 'int's loading\_name : *str* loading\_format\_string : list of 'int's loading : { StructuredConstantLoading, StructuredAperiodicLoading, StructuredPeriodicLoading zones : list of 'StructuredZone's zones\_with\_loading\_data : list of 'int's Nt : int n\_zones : *int* n\_zones\_with\_loading\_data : int \_update\_geometry\_info\_str() time\_steps : (Nt,) array add\_StructuredConstantGeometry() add\_StructuredAperiodicGeometry() add\_StructuredPeriodicGeometry() add\_StructuredConstantLoading() add\_StructuredAperiodicLoading() add\_StructuredPeriodicLoading() print\_info() set\_units\_string() set\_geometry\_comment() set\_loading\_comment() write\_geometry\_file() write\_loading\_file() read\_geometry\_file() read\_loading\_file() add\_StructuredZone() \_set\_string() \_read\_XYZblock() \_read\_IBLANKblock() **StructuredAperiodicGeometry StructuredConstantGeometry** \_read\_geometry\_header() XYZ\_coord: (3, iMax, jMax) array XYZ\_coord: (Nt, 3, iMax, jMax) array \_write\_geometry\_header() \_read\_geometry\_data() \_write\_geometry\_data() \_build\_geometry\_format\_string() normal\_coord: (3, iMax, jMax) array normal\_coord: (*Nt, 3, iMax, jMax*) *array* iblank: (*iMax*, *jMax*) array, optional iblank: (Nt, iMax, jMax) array, optional \_read\_loading\_header() \_write\_loading\_header() \_read\_loading\_data() time\_steps : (Nt,) array \_write\_loading\_data() \_build\_loading\_format\_string() \_update\_n\_zones() StructuredConstantLoading StructuredAperiodicLoading pressures: (*Nt, iMax, jMax) array* loading\_vectors: (*Nt, 3, iMax, jMax*) *array* flow\_params : (*Nt, 5, iMax, jMax*) *array* pressures: (*iMax, jMax*) *array* loading\_vectors: (*3, iMax, jMax*) *array* flow\_params : (5, iMax, jMax) array

## **PYWOPWOP Class Diagram**

Red: functionality not implemented

UnstructuredZone

## **StructuredPeriodicGeometry**

XYZ\_coord: (Nt, 3, iMax, jMax) array
normal\_coord: (Nt, 3, iMax, jMax) array
iblank: (Nt, iMax, jMax) array, optional
period : float
time\_steps : (Nt,) array

## StructuredPeriodicLoading

pressures: (*Nt, iMax, jMax) array*loading\_vectors: (*Nt, 3, iMax, jMax*) array
flow\_params : (*Nt, 5, iMax, jMax*) array

period : float
time\_steps : (Nt,) array

time\_steps : (Nt,) array

Geometry	Structured Constant	Structured Aperiodic	Structured Periodic
Header reader	✓	✓	
Data reader	<b>√</b>	<b>√</b>	
Header writer	<b>√</b>	<b>√</b>	
Data writer	<b>√</b>	<b>√</b>	
Class to hold data	✓	✓	
StructuredZone "add_XX" method	✓	<b>✓</b>	

Loading	Structured Constant	Structured Aperiodic	Structured Periodic
Header reader	✓	✓	
Data reader	✓	✓	
Header writer	✓	<b>✓</b>	
Data writer	✓	<b>√</b>	
Class to hold data	✓	<b>✓</b>	
StructuredZone "add_XX" method	✓	<b>✓</b>	

PYWOPWOP Class Diagram		
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References on UML / Class

https://www.visual-paradigm.com/g
uide/uml-unified-modeling-languag
e/uml-class-diagram-tutorial/

https://www.tutorialspoint.com/um
l/uml\_class\_diagram.htm

Diagrams: