# Boat buddy

## API Documentation

## January 3, 2020

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## 1 Module WGS84DecToDeg

#### 1.1 Functions

 $\mathbf{WGS84DecToDeg}(Ddec)$ 

Convertis les degrés decimal en degrés sexadecimal

Parameters

Ddec: angle en WGS84 decimal

(type=float)

Return Value

variable WGS84 sexadecimal

(type = tuple)

**Note:** Ddec=D+M/60+S/3600

Since: 0.8 Version: 0.9

Author: Maxime Favier

Name	Description
package	Value: None

## 2 Module WGS84DegToDec

#### 2.1 Functions

WGS84DegToDec(D, M, S)

Convertis les degrés sexadecimal en degrés decimal

**Parameters** 

D: WGS84 degrés

(type=int)

M: WGS84 minutes

(type=int)

S: WGS84 secondes

(type = float)

Return Value

variable WGS84 decimal

(type = float)

**Note:** Ddec=D+M/60+S/3600

Since: 0.9 Version: 0.9

Author: Maxime Favier

Name	Description
package	Value: None

## 3 Module angleToFunction

#### 3.1 Functions

```
\mathbf{angleToFunction}(\mathit{angle}, \mathit{point})
```

Renvoie l'équation d'une droite à partir d'un point et d'un angle ! le cas ou a = +-inf

Parameters

angle: angle par rapport au nord. (0 - 360)

(type=float)

point: point de la droite

(type=tuple)

Return Value

a et b de l'équation f(x)=ax+b

(type = tuple)

Author: Maxime Favier

Since: 0.2 Version: 0.5

Name	Description
package	Value: None

## 4 Module functionIntersect

#### 4.1 Functions

functionIntersect(a, b, c, d)

Renvoie le point d'intersection de deux fonctions f1(x)=ax+b et f2(x)=cx+d

**Parameters** 

a: coef directeur de la droite f1(x)

(type=float)

b: coef de la droite f1(x)

(type = float)

c: coef directeur de la droite f2(x)

(type = float)

d: coef de la droite f2(x)

(type=float)

Return Value

coord du point d'intersection (x,y)

(type=tuple)

Author: Maxime Favier

Version: 0.3

Name	Description
package	Value: None

## 5 Module map

## 5.1 Class DrawMap

 $\begin{array}{c} \text{PyQt5.QtWidgets.QWidget} & ---\\ & & \mathbf{map.DrawMap} \end{array}$ 

widget de la carte

Author: Maxime Favier

#### 5.1.1 Methods

\_init\_\_\_(self, im, parentClass)

Initialisation du widget pour la carte

Parameters

im: Chemain d'acces de la carte

(type=str)

parentClass: classe principale de l'UI

(type = Window)

supprimerTraces(self)

supprime le tracé des amers

paintEvent(self, event)

impressions des formes sur la carte

**Parameters** 

event: (type=QPaintEvent)

 $\mathbf{amerCreation}(\mathit{self}, \mathit{event})$ 

Creation du trace des amers et determination de la position

**Parameters** 

event: objet clic de souris

(type = QMouseEvent)

 ${f gpsDialogManager}(self)$ 

Hook pour la fenetre de dialogue GPS

Class DrawMap Module map

#### getGpsCoordinates(self, ncord, wcord)

Affiche le point GPS sur la carte

#### **Parameters**

ncord: Cordonée sexadecimal Nord

(type=tuple)

wcord: Cordonée sexadecimal ouest

(type=tuple)

#### ${\bf compute Amer GPSError}(\mathit{self})$

Calcul l'erreur entre le relevé des amers et la position GPS

#### mousePressEvent(self, event)

Hook evenement clic de souris

#### **Parameters**

event: objet clic de souris
 (type=QMouseEvent)

#### ${\bf maree Dialog Manager}(self)$

Hook pour la fenetre de dialogue marée

# $\mathbf{mareeProcessing}(self,\ TMarreeHaute,\ HMarreeHaute,\ TMarreeBasse,\ HMarreeBasse,\ time)$

Manager de calcul des informations de marée

#### **Parameters**

TMarreeHaute: heure de maree haute en min

(type=int)

HMarreeHaute: hauteur de l'eau à maree haute

(type=float)

TMarreeBasse: heure de maree basse en min

(type=int)

HMarreeBasse: hauteur de l'eau à maree basse en min

(type=float)

time: temps de la journee

(type=int)

#### posTheoriqueDialogManager(self)

Hook pour la fenetre de dialogue de calcul de la position théorique

Class DrawMap Module map

**posTheoriqueProcessing**(self, ncoord, wcoord, angleCourant, vitesseCourant, capCompas, declinaison, deviation, deriveVent, xMin)

Manager de calcul des information pour la position théorique

#### **Parameters**

ncoord: Cordonée sexadecimal Nord

(type=tuple)

wcoord: Cordonée sexadecimal Ouest

(type=tuple)

 $\verb"angle Courant: \qquad \verb"angle du courant"$ 

(type=float)

 $\verb|vitesseCourant:| vitesse du courant m/s|$ 

(type=float)

capCompas: cap compas (deg)

(type = float)

declinaison: declinaison

(type=float)

deviation: déviation

(type = float)

deriveVent: derive du vent

(type=float)

xMin: min de simulation

(type=int)

Author: Maxime Favier

#### ${\bf cap The orique Manager}(\mathit{self})$

Hook pour la fenetre de dialogue pour le calcul du cap

Class Arrow Module map

#### capTheoriqueProcessing(self, ncoord1, wcoord1, ncoord2, wcoord2, d, D, Der)

Manager du calcul de cap

#### **Parameters**

ncoord1: coordonnées deg/min/sec nord du pt A

(type=tuple)

wcoord1: coordonnées deg/min/sec ouest du pt A

(type=tuple)

ncoord2: coordonnées deg/min/sec nord du pt B

(type=tuple)

wcoord2: coordonnées deg/min/sec ouest du pt B

(type=tuple)

d: déviation

(type=float)

D: déclinaison

(type=float)

Der: dérive au vent

(type=float)

Author: Maxime Favier

#### 5.2 Class Arrow

Classe pour la création de fleches

Author: Maxime Favier

Note: Inspiré de https://gist.github.com/reusee/2406975

#### 5.2.1 Methods

 $\_$ init $\_\_$ (self, painter, pos1, pos2)

paint(self, painter)

## 6 Module mareeCalculator

#### 6.1 Functions

marreCalculator(TMarreeHaute, HMarreeHaute, TMarreeBasse, HMarreeBasse, time)

Calcule la hauteur de l'eau

**Parameters** 

TMarreeHaute: heure de maree haute en min

(type=int)

HMarreeHaute: hauteur de l'eau à maree haute

(type=float)

TMarreeBasse: heure de maree basse en min

(type=int)

HMarreeBasse: hauteur de l'eau à maree basse en min

(type=float)

time: temps de la journee

(type=int)

Return Value

hauteur de l'eau

(type=float)

Author: Maxime Favier

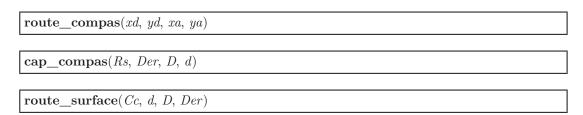
Since: 0.4 Version: 0.5

Name	Description
package	Value: None

Variables Module routeFond

## 7 Module routeFond

## 7.1 Functions



Name	Description
package	Value: None

## 8 Module run

## 8.1 Class Window

	run.Window
se j	principale du GUI
ho	r: Maxime Favier
	N. (1 1
1	Methods
_	init(self)
li	$\mathbf{nit}\mathbf{ui}(self)$
-	definitions des proprietés du GUI
_	
1-	draw_toolbar(self) Creation des bouttons de la barre de tache
	reason des boussons de la barre de saene
d	$\mathbf{lraw\_map}(self)$
р	ositionement de la carte
d	$lraw\_dock(\mathit{self})$
I	nitialisation du dock
g	${f croupePosition}(self)$
I	nitialisation des widgets du groupe position du bateau - Amers
g	$\mathbf{croupeGPS}(\mathit{self})$
1-	nitialisation des widgets du groupe GPS
g	${f croupe Amers Error}(self)$
1 –	nitialisation des widgets du groupe erreur amers
Q	$\mathbf{groupeMaree}(self)$
I –	nitialisation des widgets du groupe Marée

Initialisation des widgets du groupe Cap

Class Window Module run

#### updateLabelsAmer(self, pos1, pos2)

mise à jour des labels du groupe position amer

#### **Parameters**

pos1: position en deg, min, sec au nord

(type=str)

pos2: position en deg, min, sec a l'ouest

(type=str)

#### updateLabelsGPS(self, pos1, pos2)

mise à jour des labels du groupe position GPS

#### **Parameters**

pos1: position en deg, min, sec au nord

(type=str)

pos2: position en deg, min, sec a l'ouest

(type=str)

#### updateLabelsError(self, pos1, pos2)

mise à jour des labels du groupe position GPS

#### **Parameters**

pos1: position en deg, min, sec au nord

(type=str)

pos2: position en deg, min, sec a l'ouest

(type=str)

#### updateMarre(self, lbl1=None, lbl2=None)

mise à jour des labels du groupe marée

#### Parameters

1b11: contenu du lbl1

(type=str)

1b12: contenu du lbl2

(type=str)

Class Window Module run

 $\begin{tabular}{ll} \bf updateCap(\it self, \it capCompas="", \it routeSurface="", \it routeFond="NonImpl\xc3\xa9") \end{tabular}$ 

mise à jour des labels du groupe cap

Parameters

capCompas: contenu du label

(type=str)

 $\verb"routeSurface: label route de surface"$ 

(type=str)

routeFond: label route de fond

(type=str)

## $9 \quad Module \ test\_WGS84DecToDeg$

## 9.1 Class WGS84Dec\_Test



 $Tests \ automatiques \ pour \ la \ fonction \ WGS84DecToDeg \ qui \ convertit \ les \ degrés \ WGS84 \ decimal \ en \ sexadécimal$ 

#### 9.1.1 Methods

$\mathbf{test\_1}(\mathit{self})$	
$38.8897 = 38\ 53'\ 23''$	

test_2(self)
-77.0089 = -77.00, $32$ ,

$$\frac{\textbf{test\_3}(self)}{47.494128 = 47 \ 29' \ 39"}$$

test_4(self)	
$3.043041 = 3\ 2'\ 35"$	

## $10 \quad Module \ test\_WGS84DegToDec$

## $10.1 \quad Class \ WGS84Deg\_Test$



Tests automatiques pour la fonction WGS84DegToDec qui convertit les degrés WGS84 sexadécimal en décimal

#### 10.1.1 Methods

$\mathbf{test\_1}(self)$
$38.8897 = 38\ 53'\ 23"$

test_2(self)
-77.0089 = -77.00° 32°

$\mathbf{test\_3}(self)$	
$47.494128 = 47 \ 29' \ 39"$	

$test\_4(self)$	
$3.043041 = 3 \ 2' \ 35"$	

## 11 Module test\_angleToFunction

## 11.1 Class AngleToFx\_Test



tests automatiques de angle To<br/>Function qui renvoie l'equation affine d'une droite à partir de l'angle par<br/> rapport au nord et la position d'un point

#### 11.1.1 Methods

$\boxed{\textbf{test\_angle0}(self)}$
teste que quand l'angle est 0, a tend vers l'infini

test\_angle180(self)
teste quand l'angle est 180, a tend vers moins l'infini

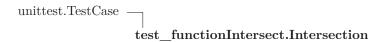
 $\frac{\text{test\_angle45}(\textit{self})}{\text{teste quand l'angle est 45, a=1}}$ 

test\_angle225(self)
teste quand l'angle est 255 au point (1,1), a=1 et b=2

test\_angle315(self)
teste quand l'angle est 315 au point (1,0), a=-1 et b=-1

## 12 Module test\_functionIntersect

#### 12.1 Class Intersection



tests automatiques de la fonction d'intersection qui calcule le point d'intersection avec de deux fonctions affines

#### 12.1.1 Methods

#### test\_droitesParalleles(self)

teste que la fonction retourne une erreur lorsque les deux droites sont parralles

#### $test\_intersection00(self)$

teste que la fonction retourne (0,0) comme point d'intersection pour les fonctions y=x et y=-4x

#### $test\_intersection12(self)$

teste que la fonction retourne (1,2) comme point d'intersection pour les fonctions y=-2x+4 et y=3x-1

#### test\_intersection52(self)

teste que la fonction retourne (5,-2) comme point d'intersection pour les fonctions y=-5/7x+11/7 et y=3/5x-5

## 13 Module test mareeCalculator

## 13.1 Class Maree\_Test



tests automatiques de la fonction qui calcule la hauteur de l'eau à toute heure avec les informations de marée

#### 13.1.1 Methods

#### test\_maree1(self)

v. les exercices pour préparer le permis hauturier p<br/>17-18 BM 4h57 3.45m PM 11h03 7.05m la hauteur de l'eau à 7h45 est -+<br/>5.03m  $\,$ 

#### $test\_maree2(self)$

v. les exercices pour préparer le permis hauturier p<br/>19-20 BM 13h 18 $2.25\mathrm{m}$  PM 19h 06 $5.85\mathrm{m}$  la hauteur de l'eau à 16h 20 est<br/>  $+\text{-}4.18\mathrm{m}$ 

#### test\_maree3(self)

v. les exercices pour préparer le permis hauturier p<br/>23-24 PM 18h 14 5.70m BM 12h 08 1.85m la hauteur de l'eau à 15h est<br/>  $+\!\!\!-$  3.60m

#### $test\_maree4(self)$

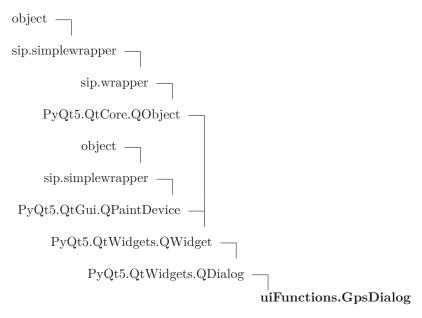
v. les exercices pour préparer le permis hauturier p<br/>25-26 PM 12h04 7.3m BM 17h52 1.6m la hauteur de l'eau à 16h10 est<br/> +-2.81

## 14 Module uiFunctions

#### 14.1 Variables

Name	Description
package	Value: None

## 14.2 Class GpsDialog



Interface de dialogue pour le GPS

Author: Maxime Favier

#### **14.2.1** Methods

init(self, parent)				
Initialisation des widgets				
Parameters				
parent: class parente DrawMap				
(type = DrawMap)				
Overrides: objectinit				

$\mathbf{ok}(self)$	
Fonction Valider	

 $Inherited\ from\ PyQt5. QtWidgets. QDialog$ 

accept(), accepted(), closeEvent(), contextMenuEvent(), done(), eventFilter(), exec\_(),
finished(), isSizeGripEnabled(), keyPressEvent(), minimumSizeHint(), open(), reject(), rejected(), resizeEvent(), result(), setModal(), setResult(), setSizeGripEnabled(), setVisible(), showEvent(), sizeHint()

## $Inherited\ from\ PyQt5. QtWidgets. QWidget$

acceptDrops(), accessibleDescription(), accessibleName(), actionEvent(), actions(), activateWindow(), addAction(), addActions(), adjustSize(), autoFillBackground(), backgroundRole(), baseSize(), changeEvent(), childAt(), childrenRect(), children-Region(), clearFocus(), clearMask(), close(), contentsMargins(), contentsRect(), contextMenuPolicy(), create(), createWindowContainer(), cursor(), customContextMenuRequested(), destroy(), devType(), dragEnterEvent(), dragLeaveEvent(), dragMoveEvent(), dropEvent(), effectiveWinId(), ensurePolished(), enterEvent(), event(), find(), focusInEvent(), focusNextChild(), focusNextPrevChild(), focusOutEvent(), focusPolicy(), focusPreviousChild(), focusProxy(), focusWidget(), font(), fontInfo(), fontMetrics(), foregroundRole(), frameGeometry(), frameSize(), geometry(), get-ContentsMargins(), grab(), grabGesture(), grabKeyboard(), grabMouse(), grab-Shortcut(), graphicsEffect(), graphicsProxyWidget(), hasFocus(), hasHeightFor-Width(), hasMouseTracking(), hasTabletTracking(), height(), heightForWidth(), hide(), hideEvent(), initPainter(), inputMethodEvent(), inputMethodHints(), inputMethodQuery(), insertAction(), insertActions(), isActiveWindow(), isAncestorOf(), isEnabled(), isEnabledTo(), isFullScreen(), isHidden(), isLeftToRight(), is-Maximized(), isMinimized(), isModal(), isRightToLeft(), isVisible(), isVisibleTo(), isWindow(), isWindowModified(), keyReleaseEvent(), keyboardGrabber(), layout(), layoutDirection(), leaveEvent(), locale(), lower(), mapFrom(), mapFromGlobal(), mapFromParent(), mapTo(), mapToGlobal(), mapToParent(), mask(), maximumHeight(), maximumSize(), maximumWidth(), metric(), minimumHeight(), minimumSize(), minimumWidth(), mouseDoubleClickEvent(), mouseGrabber(), mouseMoveEvent(), mousePressEvent(), mouseReleaseEvent(), move(), moveEvent(), nativeEvent(), nativeParentWidget(), nextInFocusChain(), normalGeometry(), overrideWindowFlags(), overrideWindowState(), paintEngine(), paintEvent(), palette(), parentWidget(), pos(), previousInFocusChain(), raise (), rect(), releaseKeyboard(), releaseMouse(), releaseShortcut(), removeAction(), render(), repaint(), resize(), restoreGeometry(), saveGeometry(), scroll(), setAcceptDrops(), setAccessibleDescription(), setAccessibleName(), setAttribute(), setAutoFillBackground(), setBackgroundRole(), set-BaseSize(), setContentsMargins(), setContextMenuPolicy(), setCursor(), setDisabled(), setEnabled(), setFixedHeight(), setFixedSize(), setFixedWidth(), setFocus(), setFocusPolicy(), setFocusProxy(), setFont(), setForegroundRole(), setGeometry(), setGraphicsEffect(), setHidden(), setInputMethodHints(), setLayout(), setLayoutDirection(), setLocale(), setMask(), setMaximumHeight(), setMaximum-Size(), setMaximumWidth(), setMinimumHeight(), setMinimumSize(), setMinimumWidth(), setMouseTracking(), setPalette(), setParent(), setShortcutAutoRepeat(), setShortcutEnabled(), setSizeIncrement(), setSizePolicy(), setStatusTip(), setStyle(), setStyleSheet(), setTabOrder(), setTabletTracking(), setToolTip(), set-

ToolTipDuration(), setUpdatesEnabled(), setWhatsThis(), setWindowFilePath(), setWindowFlag(), setWindowFlags(), setWindowIcon(), setWindowIconText(), setWindowModality(), setWindowModified(), setWindowOpacity(), setWindowRole(), setWindowState(), setWindowTitle(), sharedPainter(), show(), showFullScreen(), show-Maximized(), showMinimized(), showNormal(), size(), sizeIncrement(), sizePolicy(), stackUnder(), statusTip(), style(), styleSheet(), tabletEvent(), testAttribute(), toolTip(), toolTipDuration(), underMouse(), ungrabGesture(), unsetCursor(), unsetLayoutDirection(), unsetLocale(), update(), updateGeometry(), updateMicro-Focus(), updatesEnabled(), visibleRegion(), whatsThis(), wheelEvent(), width(), winId(), window(), windowFilePath(), windowFlags(), windowHandle(), window-Icon(), windowIconChanged(), windowIconText(), windowIconTextChanged(), windowTitle(), windowTitleChanged(), windowType(), x(), y()

## $Inherited\ from\ PyQt5. QtCore.\ QObject$

\_\_getattr\_\_(), blockSignals(), childEvent(), children(), connectNotify(), customEvent(), deleteLater(), destroyed(), disconnect(), disconnectNotify(), dumpObjectInfo(), dumpObjectTree(), dynamicPropertyNames(), findChild(), findChildren(), inherits(), installEventFilter(), isSignalConnected(), isWidgetType(), isWindowType(), killTimer(), metaObject(), moveToThread(), objectName(), objectNameChanged(), parent(), property(), pyqtConfigure(), receivers(), removeEventFilter(), sender(), senderSignalIndex(), setObjectName(), setProperty(), signalsBlocked(), startTimer(), thread(), timerEvent(), tr()

## $Inherited\ from\ PyQt5. QtGui. QPaintDevice$

colorCount(), depth(), devicePixelRatio(), devicePixelRatioF(), devicePixelRatioF-Scale(), heightMM(), logicalDpiX(), logicalDpiY(), paintingActive(), physicalD-piX(), physicalDpiY(), widthMM()

## Inherited from sip.simplewrapper

new	
	< ∕

## Inherited from object

$\underline{}$ delattr $\underline{}$ (),	forn	nat	_(),	getattribu	ıte(	(),has	h()	,re	educe	$_{-}(),$
reduce_ex	_(),	repr_	_(),	$\_$ setattr $\_$	_(), _	_sizeof	_(),	_str	_(),	_sub-
classhook()										

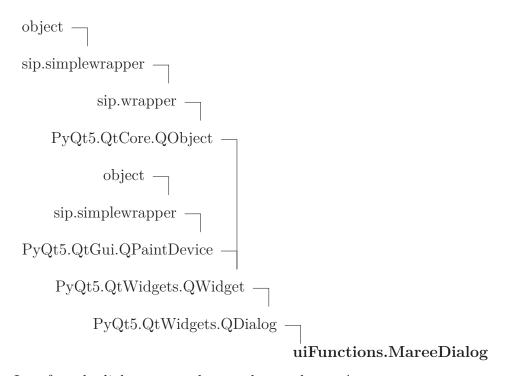
#### 14.2.2 Properties

Name	Description
Inherited from object	
class	

#### 14.2.3 Class Variables

Name	Description				
Inherited from PyQt5. QtWidgets. QDialog					
Accepted, Rejected					
Inherited from PyQt5.QtWie	lgets. QWidget				
DrawChildren, DrawWindowBackground, IgnoreMask					
Inherited from PyQt5.QtCor	e.QObject				
staticMetaObject					
Inherited from PyQt5.QtGui	.QPaintDevice				
PdmDepth, PdmDevicePixelRatio, PdmDevicePixelRatioScaled,					
PdmDpiX, PdmDpiY, PdmHeight, PdmHeightMM, PdmNumColors,					
PdmPhysicalDpiX, PdmPhysicalDpiY, PdmWidth, PdmWidthMM					

## 14.3 Class MareeDialog



Interface de dialogue pour le carculateur de marée

**Author:** Maxime Favier

#### 14.3.1 Methods

\_\_init\_\_\_\_(self, parent, gparrent)

Initialisation des widgets

#### **Parameters**

parent: Classe parente DrawMap

(type = DrawMap)

gparrent: Classe de l'UI

(type = Window)

Overrides: object.\_\_\_init\_\_

#### pleineMerGroupe(self)

Initialisation des widgets pleine mer

## basseMerGroupe(self)

Initialisation des widgets basse mer

ok(self)

Fonction valider

## $Inherited\ from\ PyQt5. QtWidgets. QDialog$

accept(), accepted(), closeEvent(), contextMenuEvent(), done(), eventFilter(), exec\_\_(),
finished(), isSizeGripEnabled(), keyPressEvent(), minimumSizeHint(), open(), reject(), rejected(), resizeEvent(), result(), setModal(), setResult(), setSizeGripEnabled(), setVisible(), showEvent(), sizeHint()

## $Inherited\ from\ PyQt5. QtWidgets. QWidget$

acceptDrops(), accessibleDescription(), accessibleName(), actionEvent(), actions(), activateWindow(), addAction(), addActions(), adjustSize(), autoFillBackground(), backgroundRole(), baseSize(), changeEvent(), childAt(), childrenRect(), childrenRegion(), clearFocus(), clearMask(), close(), contentsMargins(), contentsRect(), contextMenuPolicy(), create(), createWindowContainer(), cursor(), customContextMenuRequested(), destroy(), devType(), dragEnterEvent(), dragLeaveEvent(), dragMoveEvent(), dropEvent(), effectiveWinId(), ensurePolished(), enterEvent(), event(), find(), focusInEvent(), focusNextChild(), focusNextPrevChild(), focusOutEvent(), focusPolicy(), focusPreviousChild(), focusProxy(), focusWidget(), font(), fontInfo(), fontMetrics(), foregroundRole(), frameGeometry(), frameSize(), geometry(), getContentsMargins(), grab(), grabGesture(), grabKeyboard(), grabMouse(), grab-Shortcut(), graphicsEffect(), graphicsProxyWidget(), hasFocus(), hasHeightFor-

Width(), hasMouseTracking(), hasTabletTracking(), height(), heightForWidth(), hide(), hideEvent(), initPainter(), inputMethodEvent(), inputMethodHints(), inputMethodQuery(), insertAction(), insertActions(), isActiveWindow(), isAncestorOf(), isEnabled(), isEnabledTo(), isFullScreen(), isHidden(), isLeftToRight(), is-Maximized(), isMinimized(), isModal(), isRightToLeft(), isVisible(), isVisibleTo(), isWindow(), isWindowModified(), keyReleaseEvent(), keyboardGrabber(), layout(), layoutDirection(), leaveEvent(), locale(), lower(), mapFrom(), mapFromGlobal(), mapFromParent(), mapTo(), mapToGlobal(), mapToParent(), mask(), maximumHeight(), maximumSize(), maximumWidth(), metric(), minimumHeight(), minimumSize(), minimumWidth(), mouseDoubleClickEvent(), mouseGrabber(), mouseMoveEvent(), mousePressEvent(), mouseReleaseEvent(), move(), moveEvent(), nativeEvent(), nativeParentWidget(), nextInFocusChain(), normalGeometry(), overrideWindowFlags(), overrideWindowState(), paintEngine(), paintEvent(), palette(), parentWidget(), pos(), previousInFocusChain(), raise (), rect(), releaseKeyboard(), releaseMouse(), releaseShortcut(), removeAction(), render(), repaint(), resize(), restoreGeometry(), saveGeometry(), scroll(), setAcceptDrops(), setAccessibleDescription(), setAccessibleName(), setAttribute(), setAutoFillBackground(), setBackgroundRole(), set-BaseSize(), setContentsMargins(), setContextMenuPolicy(), setCursor(), setDisabled(), setEnabled(), setFixedHeight(), setFixedSize(), setFixedWidth(), setFocus(), setFocusPolicy(), setFocusProxy(), setFont(), setForegroundRole(), setGeometry(), setGraphicsEffect(), setHidden(), setInputMethodHints(), setLayout(), setLayoutDirection(), setLocale(), setMask(), setMaximumHeight(), setMaximum-Size(), setMaximumWidth(), setMinimumHeight(), setMinimumSize(), setMinimumWidth(), setMouseTracking(), setPalette(), setParent(), setShortcutAutoRepeat(), setShortcutEnabled(), setSizeIncrement(), setSizePolicy(), setStatusTip(), setStyle(), setStyleSheet(), setTabOrder(), setTabletTracking(), setToolTip(), set-ToolTipDuration(), setUpdatesEnabled(), setWhatsThis(), setWindowFilePath(), setWindowFlag(), setWindowFlags(), setWindowIcon(), setWindowIconText(), setWindowModality(), setWindowModified(), setWindowOpacity(), setWindowRole(), setWindowFole(), s dowState(), setWindowTitle(), sharedPainter(), show(), showFullScreen(), show-Maximized(), showMinimized(), showNormal(), size(), sizeIncrement(), sizePolicy(), stackUnder(), statusTip(), style(), styleSheet(), tabletEvent(), testAttribute(). toolTip(), toolTipDuration(), underMouse(), ungrabGesture(), unsetCursor(), unsetLayoutDirection(), unsetLocale(), update(), updateGeometry(), updateMicro-Focus(), updatesEnabled(), visibleRegion(), whatsThis(), wheelEvent(), width(), winId(), window(), windowFilePath(), windowFlags(), windowHandle(), window-Icon(), windowIconChanged(), windowIconText(), windowIconTextChanged(), windowModality(), windowOpacity(), windowRole(), windowState(), windowTitle(), windowTitleChanged(), windowType(), x(), y()

## Inherited from PyQt5.QtCore.QObject

\_\_getattr\_\_(), blockSignals(), childEvent(), children(), connectNotify(), customEvent(), deleteLater(), destroyed(), disconnect(), disconnectNotify(), dumpObjectInfo(), dumpObjectTree(), dynamicPropertyNames(), findChild(), findChildren(), inher-

its(), installEventFilter(), isSignalConnected(), isWidgetType(), isWindowType(), killTimer(), metaObject(), moveToThread(), objectName(), objectNameChanged(), parent(), property(), pyqtConfigure(), receivers(), removeEventFilter(), sender(), senderSignalIndex(), setObjectName(), setProperty(), signalsBlocked(), startTimer(), thread(), timerEvent(), tr()

## $Inherited\ from\ PyQt5. QtGui. QPaintDevice$

colorCount(), depth(), devicePixelRatio(), devicePixelRatioF(), devic

## $Inherited\ from\ sip.simple wrapper$

\_\_\_new\_\_\_()

## Inherited from object

$\_\delattr_$	(), _	fori	mat	_(),	_getattrib	ute	_(),h	ash	_(),	reduce_	(),
reduce_	_ex(	$(), \underline{\hspace{1cm}}$	_repr_	(), _	$\_\_$ setattr $\_$	(), _	sizeof	(),	str_	(),	_sub-
$classhook\_$	()										

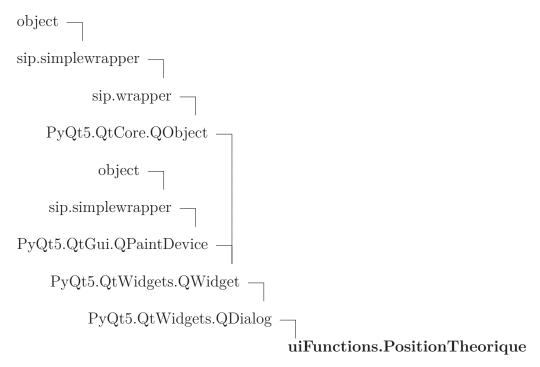
#### 14.3.2 Properties

Name	Description
Inherited from object	
class	

#### 14.3.3 Class Variables

Name	Description					
Inherited from PyQt5.QtWid	Inherited from PyQt5.QtWidgets.QDialog					
Accepted, Rejected						
Inherited from PyQt5. QtWidgets. QWidget						
DrawChildren, DrawWindowBackground, IgnoreMask						
Inherited from PyQt5.QtCore.QObject						
staticMetaObject						
Inherited from PyQt5.QtGui.QPaintDevice						
PdmDepth, PdmDevicePixelRatio, PdmDevicePixelRatioScaled,						
PdmDpiX, PdmDpiY, PdmHeight, PdmHeightMM, PdmNumColors,						
PdmPhysicalDpiX, PdmPhysicalDpiY, PdmWidth, PdmWidthMM						

## 14.4 Class PositionTheorique



Interface graphique pour le calcul de la position theorique

**Author:** Maxime Favuer

#### 14.4.1 Methods

${\bf TempsGroupe}(\mathit{self})$	
$\mathbf{ok}(\mathit{self})$	

#### $Inherited\ from\ PyQt5.QtWidgets.QDialog$

accept(), accepted(), closeEvent(), contextMenuEvent(), done(), eventFilter(), exec\_(), finished(), isSizeGripEnabled(), keyPressEvent(), minimumSizeHint(), open(), reject(), rejected(), resizeEvent(), result(), setModal(), setResult(), setSizeGripEnabled(), setVisible(), showEvent(), sizeHint()

## $Inherited\ from\ PyQt5. QtWidgets. QWidget$

acceptDrops(), accessibleDescription(), accessibleName(), actionEvent(), actions(), activateWindow(), addAction(), addActions(), adjustSize(), autoFillBackground(), backgroundRole(), baseSize(), changeEvent(), childAt(), childrenRect(), children-Region(), clearFocus(), clearMask(), close(), contentsMargins(), contentsRect(), contextMenuPolicy(), create(), createWindowContainer(), cursor(), customContextMenuRequested(), destroy(), devType(), dragEnterEvent(), dragLeaveEvent(), dragMoveEvent(), dropEvent(), effectiveWinId(), ensurePolished(), enterEvent(), event(), find(), focusInEvent(), focusNextChild(), focusNextPrevChild(), focusOutEvent(), focusPolicy(), focusPreviousChild(), focusProxy(), focusWidget(), font(), fontInfo(), fontMetrics(), foregroundRole(), frameGeometry(), frameSize(), geometry(), get-ContentsMargins(), grab(), grabGesture(), grabKeyboard(), grabMouse(), grab-Shortcut(), graphicsEffect(), graphicsProxyWidget(), hasFocus(), hasHeightFor-Width(), hasMouseTracking(), hasTabletTracking(), height(), heightForWidth(), hide(), hideEvent(), initPainter(), inputMethodEvent(), inputMethodHints(), inputMethodQuery(), insertAction(), insertActions(), isActiveWindow(), isAncestorOf(), isEnabled(), isEnabledTo(), isFullScreen(), isHidden(), isLeftToRight(), is-Maximized(), isMinimized(), isModal(), isRightToLeft(), isVisible(), isVisibleTo(), isWindow(), isWindowModified(), keyReleaseEvent(), keyboardGrabber(), layout(), layoutDirection(), leaveEvent(), locale(), lower(), mapFrom(), mapFromGlobal(), mapFromParent(), mapTo(), mapToGlobal(), mapToParent(), mask(), maximumHeight(), maximumSize(), maximumWidth(), metric(), minimumHeight(), minimumSize(), minimumWidth(), mouseDoubleClickEvent(), mouseGrabber(), mouseMoveEvent(), mousePressEvent(), mouseReleaseEvent(), move(), moveEvent(), nativeEvent(), nativeParentWidget(), nextInFocusChain(), normalGeometry(), overrideWindowFlags(), overrideWindowState(), paintEngine(), paintEvent(), palette(), parentWidget(), pos(), previousInFocusChain(), raise (), rect(), releaseKeyboard(), releaseMouse(), releaseShortcut(), removeAction(), render(), repaint(), resize(), restoreGeometry(), saveGeometry(), scroll(), setAcceptDrops(), setAccessibleDescription(), setAccessibleName(), setAttribute(), setAutoFillBackground(), setBackgroundRole(), set-BaseSize(), setContentsMargins(), setContextMenuPolicy(), setCursor(), setDisabled(), setEnabled(), setFixedHeight(), setFixedSize(), setFixedWidth(), setFocus(), setFocusPolicy(), setFocusProxy(), setFont(), setForegroundRole(), setGeometry(), setGraphicsEffect(), setHidden(), setInputMethodHints(), setLayout(), setLayoutDirection(), setLocale(), setMask(), setMaximumHeight(), setMaximum-Size(), setMaximumWidth(), setMinimumHeight(), setMinimumSize(), setMinimumWidth(), setMouseTracking(), setPalette(), setParent(), setShortcutAutoRepeat(), setShortcutEnabled(), setSizeIncrement(), setSizePolicy(), setStatusTip(), setStyle(), setStyleSheet(), setTabOrder(), setTabletTracking(), setToolTip(), set-ToolTipDuration(), setUpdatesEnabled(), setWhatsThis(), setWindowFilePath(), setWindowFlag(), setWindowFlags(), setWindowIcon(), setWindowIconText(), setWindowModality(), setWindowModified(), setWindowOpacity(), setWindowRole(), setWindowState(), setWindowTitle(), sharedPainter(), show(), showFullScreen(), show-Maximized(), showMinimized(), showNormal(), size(), sizeIncrement(), sizePolicy(), stackUnder(), statusTip(), style(), styleSheet(), tabletEvent(), testAttribute(), toolTip(), toolTipDuration(), underMouse(), ungrabGesture(), unsetCursor(), unsetLayoutDirection(), unsetLocale(), update(), updateGeometry(), updateMicro-Focus(), updatesEnabled(), visibleRegion(), whatsThis(), wheelEvent(), width(), winId(), window(), windowFilePath(), windowFlags(), windowHandle(), window-Icon(), windowIconChanged(), windowIconText(), windowIconTextChanged(), windowModality(), windowOpacity(), windowRole(), windowState(), windowTitle(), windowTitleChanged(), windowType(), x(), y()

## $Inherited\ from\ PyQt5. QtCore. QObject$

\_\_getattr\_\_(), blockSignals(), childEvent(), children(), connectNotify(), customEvent(), deleteLater(), destroyed(), disconnect(), disconnectNotify(), dumpObjectInfo(), dumpObjectTree(), dynamicPropertyNames(), findChild(), findChildren(), inherits(), installEventFilter(), isSignalConnected(), isWidgetType(), isWindowType(), killTimer(), metaObject(), moveToThread(), objectName(), objectNameChanged(), parent(), property(), pyqtConfigure(), receivers(), removeEventFilter(), sender(), senderSignalIndex(), setObjectName(), setProperty(), signalsBlocked(), startTimer(), thread(), timerEvent(), tr()

## $Inherited\ from\ PyQt5. QtGui. QPaintDevice$

colorCount(), depth(), devicePixelRatio(), devicePixelRatioF(), devic

## $Inherited\ from\ sip.simple wrapper$

\_\_\_new\_\_\_()

#### Inherited from object

\_\_delattr\_\_(), \_\_format\_\_(), \_\_getattribute\_\_(), \_\_hash\_\_(), \_\_reduce\_\_(), \_\_reduce\_ex\_\_(), \_\_repr\_\_(), \_\_setattr\_\_(), \_\_sizeof\_\_(), \_\_str\_\_(), \_\_sub-classhook\_\_()

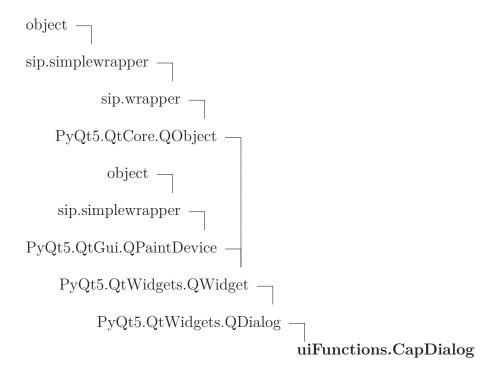
#### 14.4.2 Properties

Name	Description
Inherited from object	
class	

#### 14.4.3 Class Variables

Name	Description					
Inherited from PyQt5.QtWie	$\overline{lgets.QDialog}$					
Accepted, Rejected	Accepted, Rejected					
Inherited from PyQt5.QtWidgets.QWidget						
DrawChildren, DrawWindowBackground, IgnoreMask						
Inherited from PyQt5.QtCore.QObject						
staticMetaObject						
Inherited from PyQt5.QtGui.QPaintDevice						
PdmDepth, PdmDevicePixelRatio, PdmDevicePixelRatioScaled,						
PdmDpiX, PdmDpiY, PdmHeight, PdmHeightMM, PdmNumColors,						
PdmPhysicalDpiX, PdmPhysicalDpiY, PdmWidth, PdmWidthMM						

## 14.5 Class CapDialog



Interface de dialogue pour le calcul du cap

**Author:** Maxime Favier

#### 14.5.1 Methods

 $\frac{\mathbf{ok}(self)}{\text{Fonction Valider}}$ 

## $Inherited\ from\ PyQt5. QtWidgets. QDialog$

accept(), accepted(), closeEvent(), contextMenuEvent(), done(), eventFilter(), exec\_(), finished(), isSizeGripEnabled(), keyPressEvent(), minimumSizeHint(), open(), reject(), rejected(), resizeEvent(), result(), setModal(), setResult(), setSizeGripEnabled(), setVisible(), showEvent(), sizeHint()

## $Inherited\ from\ PyQt5. QtWidgets. QWidget$

acceptDrops(), accessibleDescription(), accessibleName(), actionEvent(), actions(), activateWindow(), addAction(), addActions(), adjustSize(), autoFillBackground(), backgroundRole(), baseSize(), changeEvent(), childAt(), childrenRect(), children-Region(), clearFocus(), clearMask(), close(), contentsMargins(), contentsRect(), contextMenuPolicy(), create(), createWindowContainer(), cursor(), customContextMenuRequested(), destroy(), devType(), dragEnterEvent(), dragLeaveEvent(), dragMoveEvent(), dropEvent(), effectiveWinId(), ensurePolished(), enterEvent(), event(), find(), focusInEvent(), focusNextChild(), focusNextPrevChild(), focusOutEvent(), focusPolicy(), focusPreviousChild(), focusProxy(), focusWidget(), font(), fontInfo(), fontMetrics(), foregroundRole(), frameGeometry(), frameSize(), geometry(), get-ContentsMargins(), grab(), grabGesture(), grabKeyboard(), grabMouse(), grab-Shortcut(), graphicsEffect(), graphicsProxyWidget(), hasFocus(), hasHeightFor-Width(), hasMouseTracking(), hasTabletTracking(), height(), heightForWidth(), hide(), hideEvent(), initPainter(), inputMethodEvent(), inputMethodHints(), inputMethodQuery(), insertAction(), insertActions(), isActiveWindow(), isAncestorOf(), isEnabled(), isEnabledTo(), isFullScreen(), isHidden(), isLeftToRight(), is-Maximized(), isMinimized(), isModal(), isRightToLeft(), isVisible(), isVisibleTo(), isWindow(), isWindowModified(), keyReleaseEvent(), keyboardGrabber(), layout(),

layoutDirection(), leaveEvent(), locale(), lower(), mapFrom(), mapFromGlobal(), mapFromParent(), mapTo(), mapToGlobal(), mapToParent(), mask(), maximumHeight(), maximumSize(), maximumWidth(), metric(), minimumHeight(), minimumSize(), minimumWidth(), mouseDoubleClickEvent(), mouseGrabber(), mouseMoveEvent(), mousePressEvent(), mouseReleaseEvent(), move(), moveEvent(), nativeEvent(), nativeParentWidget(), nextInFocusChain(), normalGeometry(), overrideWindowFlags(), overrideWindowState(), paintEngine(), paintEvent(), palette(), parentWidget(), pos(), previousInFocusChain(), raise (), rect(), releaseKeyboard(), releaseMouse(), releaseShortcut(), removeAction(), render(), repaint(), resize(), restoreGeometry(), saveGeometry(), scroll(), setAcceptDrops(), setAccessibleDescription(), setAccessibleName(), setAttribute(), setAutoFillBackground(), setBackgroundRole(), set-BaseSize(), setContentsMargins(), setContextMenuPolicy(), setCursor(), setDisabled(), setEnabled(), setFixedHeight(), setFixedSize(), setFixedWidth(), setFocus(), setFocusPolicy(), setFocusProxy(), setFont(), setForegroundRole(), setGeometry(), setGraphicsEffect(), setHidden(), setInputMethodHints(), setLayout(), setLayoutDirection(), setLocale(), setMask(), setMaximumHeight(), setMaximum-Size(), setMaximumWidth(), setMinimumHeight(), setMinimumSize(), setMinimumWidth(), setMouseTracking(), setPalette(), setParent(), setShortcutAutoRepeat(), setShortcutEnabled(), setSizeIncrement(), setSizePolicy(), setStatusTip(), setStyle(), setStyleSheet(), setTabOrder(), setTabletTracking(), setToolTip(), set-ToolTipDuration(), setUpdatesEnabled(), setWhatsThis(), setWindowFilePath(), setWindowFlag(), setWindowFlags(), setWindowIcon(), setWindowIconText(), setWindowModality(), setWindowModified(), setWindowOpacity(), setWindowRole(), setWindowState(), setWindowTitle(), sharedPainter(), show(), showFullScreen(), show-Maximized(), showMinimized(), showNormal(), size(), sizeIncrement(), sizePolicy(), stackUnder(), statusTip(), style(), styleSheet(), tabletEvent(), testAttribute(). toolTip(), toolTipDuration(), underMouse(), ungrabGesture(), unsetCursor(), unsetLayoutDirection(), unsetLocale(), update(), updateGeometry(), updateMicro-Focus(), updatesEnabled(), visibleRegion(), whatsThis(), wheelEvent(), width(), winId(), window(), windowFilePath(), windowFlags(), windowHandle(), window-Icon(), windowIconChanged(), windowIconText(), windowIconTextChanged(), windowModality(), windowOpacity(), windowRole(), windowState(), windowTitle(), windowTitleChanged(), windowType(), x(), v()

## $Inherited\ from\ PyQt5.QtCore.QObject$

\_\_getattr\_\_(), blockSignals(), childEvent(), children(), connectNotify(), customEvent(), deleteLater(), destroyed(), disconnect(), disconnectNotify(), dumpObjectInfo(), dumpObjectTree(), dynamicPropertyNames(), findChild(), findChildren(), inherits(), installEventFilter(), isSignalConnected(), isWidgetType(), isWindowType(), killTimer(), metaObject(), moveToThread(), objectName(), objectNameChanged(), parent(), property(), pyqtConfigure(), receivers(), removeEventFilter(), sender(), senderSignalIndex(), setObjectName(), setProperty(), signalsBlocked(), startTimer(), thread(), timerEvent(), tr()

## $Inherited\ from\ PyQt5. QtGui. QPaintDevice$

colorCount(), depth(), devicePixelRatio(), devicePixelRatioF(), devic

## $Inherited\ from\ sip.simple wrapper$

\_\_\_new\_\_\_()

## $Inherited\ from\ object$

delattr(	),fo	$\operatorname{rmat}_{-}$	_(),	_getattrib	ute	$(), \underline{\hspace{1cm}}$ has	h(	),1	${ m reduce}$	(),
$\_\_reduce\_ex$	(), _	repr_	(), _	$\{ m setattr}$	(), _	sizeof	_(), _	str_	(),	_sub-
classhook()										

#### 14.5.2 Properties

Name	Description
Inherited from object	
class	

#### 14.5.3 Class Variables

Name	Description						
Inherited from PyQt5.QtWie	Inherited from PyQt5.QtWidgets.QDialog						
Accepted, Rejected							
Inherited from PyQt5.QtWidgets.QWidget							
DrawChildren, DrawWindowBackground, IgnoreMask							
Inherited from PyQt5.QtCore.QObject							
staticMetaObject							
Inherited from PyQt5.QtGui.QPaintDevice							
PdmDepth, PdmDevicePixelRatio, PdmDevicePixelRatioScaled,							
PdmDpiX, PdmDpiY, PdmHeight, PdmHeightMM, PdmNumColors,							
PdmPhysicalDpiX, PdmPhysicalDpiY, PdmWidth, PdmWidthMM							

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