Table des matières

[II. HeatTransfer 3](#_Toc41656089)

[A. Components 3](#_Toc41656090)

[1. Ventilation 3](#_Toc41656091)

[1. FanVentilation 3](#_Toc41656092)

[2. FviewCalculator 3](#_Toc41656093)

[B. BasesClasses 3](#_Toc41656094)

[1. FreeConvection 3](#_Toc41656095)

[2. Linear conduction 4](#_Toc41656096)

[3. Cylindrical conduction 4](#_Toc41656097)

[4. Carroll radiation 4](#_Toc41656098)

[5. HeatCapacitor 4](#_Toc41656099)

[6. LumpVolume 4](#_Toc41656100)

[7. Heat Exchanger 4](#_Toc41656101)

[8. PartialWall 5](#_Toc41656102)

[C. Functions 6](#_Toc41656103)

[1. Flat\_plate\_ASHRAE 6](#_Toc41656104)

[2. h\_rad 6](#_Toc41656105)

[3. uniformGrid 6](#_Toc41656106)

[4. geometricalGrowthGrid 6](#_Toc41656107)

[5. biotAndUniformGrid 7](#_Toc41656108)

[6. biotAndGeometricalGrowthGrid 7](#_Toc41656109)

[7. counterCurrent 8](#_Toc41656110)

[1. NTU\_counterCurrent 8](#_Toc41656111)

[III. FluidDynamics 9](#_Toc41656112)

[A. Components 9](#_Toc41656113)

[1. PartialPump 9](#_Toc41656114)

[2. SimpleOpening 9](#_Toc41656115)

[3. StaticPipe 9](#_Toc41656116)

[4. VerticalOpening 9](#_Toc41656117)

[5. HorizontalOpening 10](#_Toc41656118)

[B. BasesClasses 10](#_Toc41656119)

[1. AeraulicConvection 10](#_Toc41656120)

[2. Condensation 10](#_Toc41656121)

[3. MolecularDiffusion 10](#_Toc41656122)

[4. GasNode 11](#_Toc41656123)

[5. FogModel 11](#_Toc41656124)

[C. Functions 12](#_Toc41656125)

[1. rootsPolyorder3 12](#_Toc41656126)

[IV. PDE 14](#_Toc41656127)

[A. ThermalDiffusion 14](#_Toc41656128)

[1. Second order central 14](#_Toc41656129)

# HeatTransfer

## Components

### Ventilation

### FanVentilation

### FviewCalculator

## BasesClasses

### FreeConvection

### Linear conduction

### Cylindrical conduction

### Carroll radiation

### HeatCapacitor

### LumpVolume

### Heat Exchanger

### PartialWall

## Functions

### Flat\_plate\_ASHRAE

### h\_rad

### uniformGrid

### geometricalGrowthGrid

#### Odd number of segments

#### Even number of segments

#### Asymmetrical number of segments

### biotAndUniformGrid

### biotAndGeometricalGrowthGrid

#### Common equations

#### Odd number of segments

#### Even number of segments

#### Asymmetrical mesh

### counterCurrent

### coCurrent

### crossCurrent(both fluids unmixed)

### crossCurrent(one fluid unmixed the other mixed)

* Qc\_max (Mixed), Qc\_min (Unmixed)
* Qc\_max (Unmixed), Qc\_min (Mixed)

### NTU\_counterCurrent

### NTU\_counterCurrent

# FluidDynamics

## Components

### PartialPump

### StaticPipe

### Opening

### HorizontalOpening

### SimpleOpeningComp

### Filters

### PartialDamper

### WallLeaks

## BasesClasses

### AeraulicConvection

### Condensation

### MolecularDiffusion

### GasNode

### FogModel

### Interface\_liq\_gas

## Functions

### rootsPolyorder3

Si discriminant = 0

Si discriminant < 0

Si discriminant > 0

discriminant 2nd degré

Si discriminant = 0

Si discriminant > 0

Solution 1er degree

# PDE

## ThermalDiffusion

### Second order central