

# Anisotropic pac with medcoupling

## 1 Introduction

Validation made by : Van quang DINH.  
Report generated 19/02/2019.

### 1.1 Description

The cas test for modelling the anisotropic conduction in the GDL of PEMFC

### 1.2 Parameters TRUST

- Version TRUST :
- Version Trio\_U from out: /home/dinhvan/formation\_trust/pemfc/pemfc-exec.opt (1.7.6)

### 1.3 Test cases

- ./PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.data :

## 2 Thermal diffusivity

Here is the visualization of all components of the thermal diffusivity located at elements.  
the matrix of conductivity (2D) is a 2x2 symmetric matrix

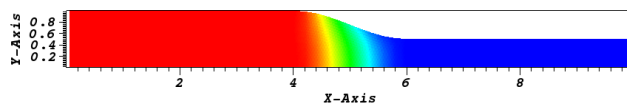
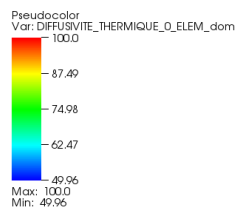
## 2 THERMAL DIFFUSIVITY

### 2.1 component 0

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### 2.1 component 0

DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549



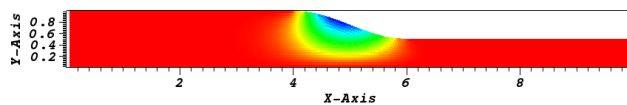
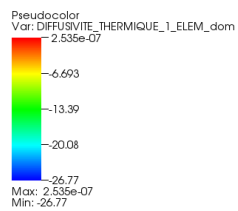
## 2 THERMAL DIFFUSIVITY

### 2.2 component 1

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### 2.2 component 1

DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549



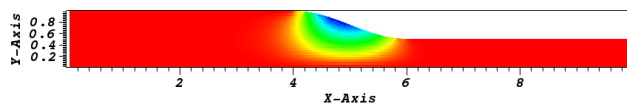
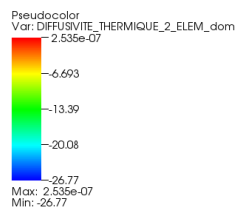
## 2 THERMAL DIFFUSIVITY

### 2.3 component 2

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### 2.3 component 2

DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549



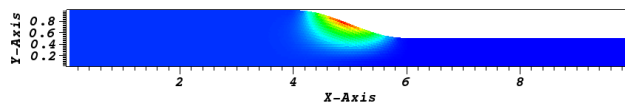
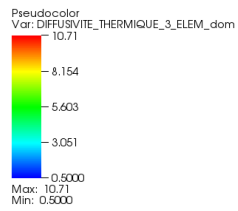
### 3 TEMPERATURE

#### 2.4 component 3

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#### 2.4 component 3

DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549



### 3 Temperature

Here is the visualization of the temperature.

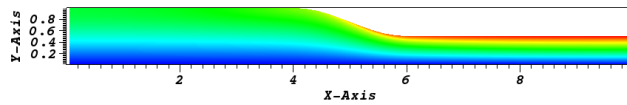
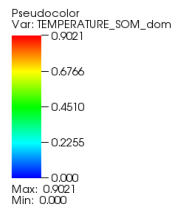
## 4 GRADIENT OF TEMPERATURE

### 3.1 Temperature field located at vertices

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DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549



## 4 Gradient of Temperature

Gradient of Temperature

## 4 GRADIENT OF TEMPERATURE

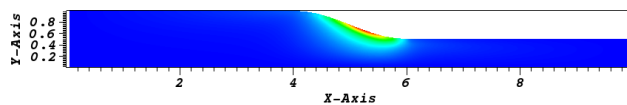
### 4.1 Flux field located at vertices - composant x

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#### 4.1 Flux field located at vertices - composant x

DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549

Pseudocolor  
Var: GRADT\_X\_SOM\_dom  
1.039  
0.7791  
0.5104  
0.2597  
-6.146e-09  
Max: 1.039  
Min: -6.146e-09



## 4 GRADIENT OF TEMPERATURE

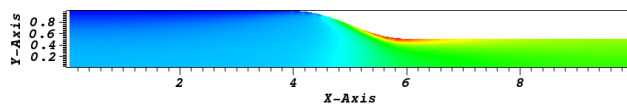
### 4.2 Flux field located at vertices - composant y

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### 4.2 Flux field located at vertices - composant y

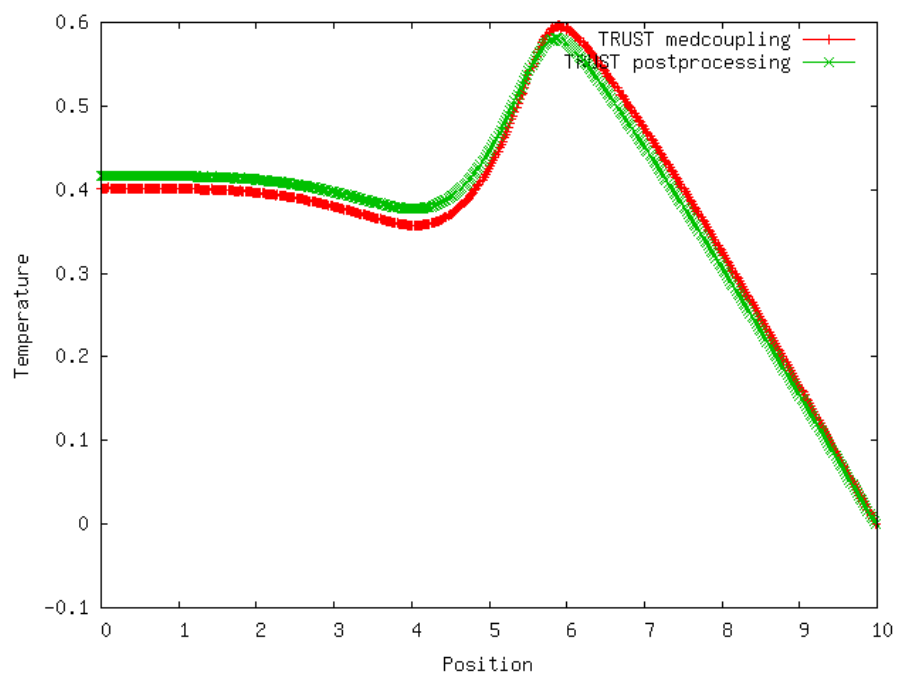
DB: PEMFC\_2D\_anisotrope\_pac\_withMEDCoupling.lata  
Time: 1.63549

Pseudocolor  
Var: GRADT\_Y\_SOM\_dom  
3.069  
2.302  
1.534  
0.7672  
-5.577e-06  
Max: 3.069  
Min: -5.577e-06





**5 Comparison of temperature (TRUST) with and without the  
correction of conductivity magnitude on the segment  $[P1,P2]$   
with  $P1=(0;1)$  and  $P2=(10;0)$**



## 6 Comparison of flux between (TRUST) with and without the correction of conductivity magnitude on boundary Haut

### 6.1 Flux au bord Haut

