

Hi, everyone,

Recently, I have tried to build a temperature-dependent material properties, but it fails because of some certain unknown reason. Would you mind checking it and giving me some guidance? Thanks a lot.

According to all what I know, I definite three "Piecewise function"s just under the Model 1 --> Materials --> Material 1 --> Basic branch, just shown in Fig. 1.

**General setting & expression of material properties**

+ material properties

- Output properties

Property	Variable	Expression	Unit	Size
Thermal conduct...	{k11, ...	tcTS(T[1/K])[W/K/m]	W/(m*...	3x3
Density	rho	dTS(T[1/K])[kg/m^3]	kg/m^3	1x1
Heat capacity at ...	Cp	hcTS(T[1/K])[J/kg/K]	J/(kg*K)	1x1

Expression:  
tcTS(T[1/K])[W/K/m]

- Model inputs

Physical quantity	Variable
Temperature	T

**The three detailed Piecewise functions**

Fig. 1 Details in definition of the material properties

In order to check its validity, I defined a local variable with the name of "dp" (see Fig. 2) to visualize it. While after I solve the model, I come to the Result --> 2D plot group --> surface, and use the variable "dp" to present the expression to plot the density distribution in the domain, which should be different due to the temperature difference. The

"Unknown function or operator.

-Name : dTS

-Plot: surf1(Surface)"

error occurs. I am quite puzzle about this. Please give me some guidance. Thanks.

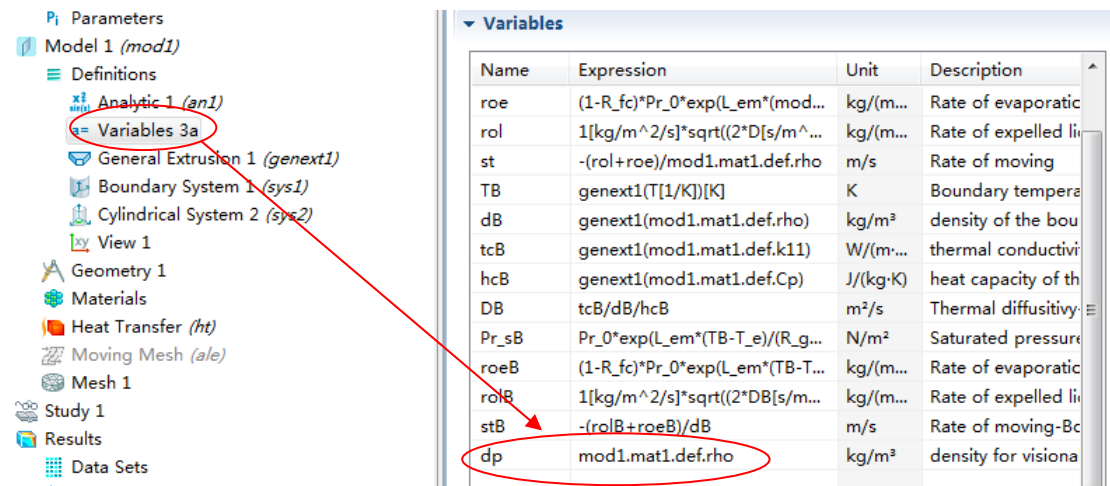


Fig. 2 Local definition of the variable dp

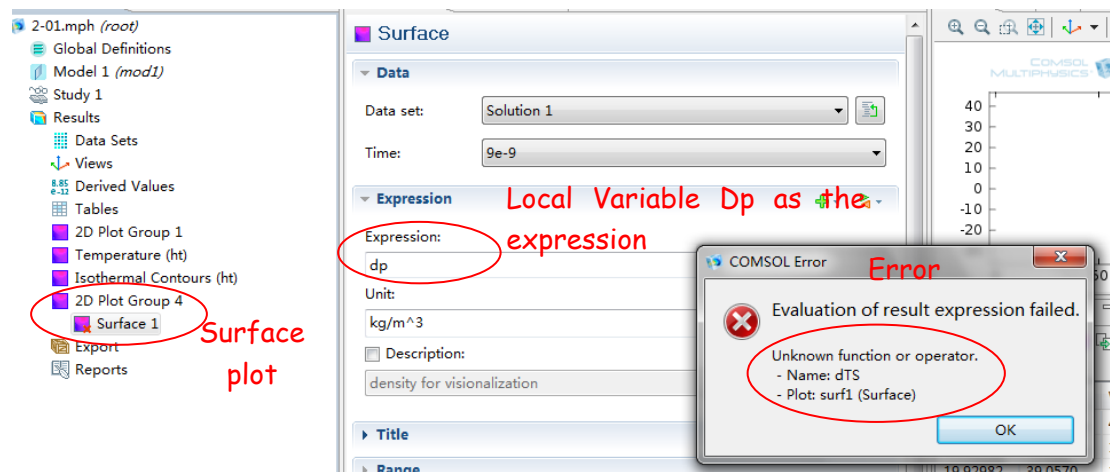


Fig. 3 Details in plot and the error

Best wishes to you and your family.

Yours  
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