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# CODES FOR CHAPTER 4 AND APPENDIX D

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## **view.f90, view.cpp, view.m**

A function to evaluate any of the 51 view factors given in Appendix D.

Input:

NO = view factor number,  $1 \leq NO \leq 51$ , as given in Appendix D,  
 NARG = number of arguments required for view factor,  
 ARG = vector of order NARG containing the arguments in alphabetical order (Greek characters following the Roman alphabet).

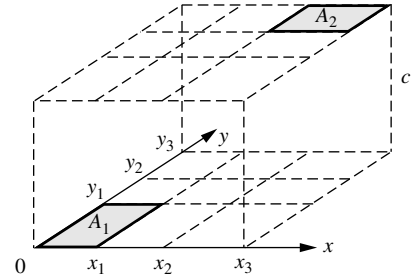
For example, for view factor 14, we have  $NO=14$ ,  $NARG=3$  and  $ARG=(h, l, r)$ . Upon return the function returns  $F_{i-j}$  (except for the infinitesimal view factors 1–9, in which case  $dF_{d1-d2}/dX$  is returned, with  $dX$  the nondimensional dimension of  $dA_2$ ).

## **parlplates.f90, parlplates.cpp, parlplates.m**

Contains function PARLPLTF( $X1, X2, X3, Y1, Y2, Y3, Z$ ) to evaluate the view factor between two displaced parallel plates, as given by equation (4.42).

Input:

$X1$  = Dimension  $x_1$  as given in adjacent sketch (length units)  
 $X2$  = Dimension  $x_2$  as given in adjacent sketch (length units)  
 $X3$  = Dimension  $x_3$  as given in adjacent sketch (length units)  
 $Y1$  = Dimension  $y_1$  as given in adjacent sketch (length units)  
 $Y2$  = Dimension  $y_2$  as given in adjacent sketch (length units)  
 $Y3$  = Dimension  $y_3$  as given in adjacent sketch (length units)  
 $Z$  = Dimension  $c$  as given in adjacent sketch (length units)

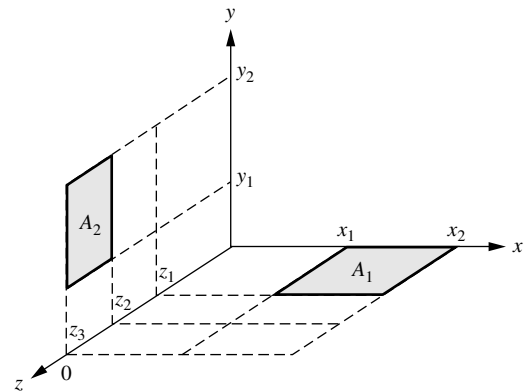


## **perpplates.f90, perpplates.cpp, perpplates.m**

Contains function PERPPLTF( $X1, X2, Y1, Y2, Z1, Z2, Z3$ ) to evaluate the view factor between two displaced perpendicular plates, as given by equation (4.41).

Input:

$X1$  = Dimension  $x_1$  as given in adjacent sketch (length units)  
 $X2$  = Dimension  $x_2$  as given in adjacent sketch (length units)  
 $Y1$  = Dimension  $y_1$  as given in adjacent sketch (length units)  
 $Y2$  = Dimension  $y_2$  as given in adjacent sketch (length units)  
 $Z1$  = Dimension  $z_1$  as given in adjacent sketch (length units)  
 $Z2$  = Dimension  $z_2$  as given in adjacent sketch (length units)  
 $Z3$  = Dimension  $z_3$  as given in adjacent sketch (length units)



## **viewfactors.f90, viewfactors.cpp, viewfactors.m, viewfactors.exe**

A stand-alone front end to functions view, parlplates and perpplates. The user is prompted to input configuration number and arguments; the program then returns the requested view factor.