
CODES FOR CHAPTER 4 AND APPENDIX D

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).

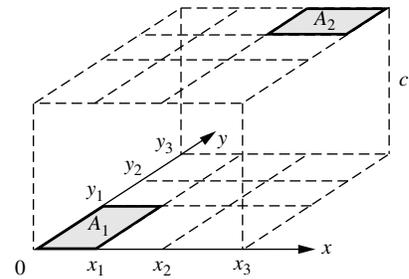
For example, for view factor 14, we have $NO=14$, $NARG=3$ and $ARG=(h, l, r)$. Upon return the function returns F_{i-j} (except for the infinitesimal view factors 1–9, in which case dF_{d1-d2}/dX is returned, with dX the nondimensional dimension of dA_2).

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)

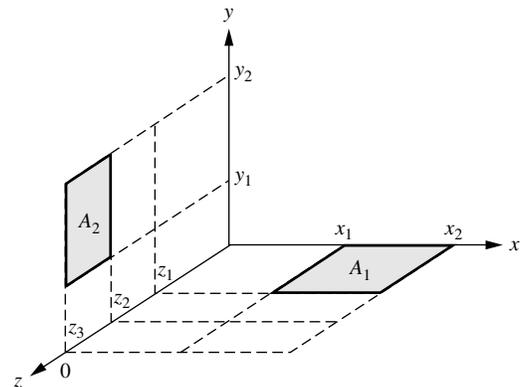


perpplates.f90, perpplates.cpp, perpplates.m

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.