

comph

if the surface coordinates are  $\phi$  and  $\theta$

but it is assumed that there are no variations in the  $\theta$  direction. It is worthwhile including the required mathematics here because the terms are not the same as in the `LineDerivatives` class. Specifically

$\theta$

$r$

the coordinate system is cylindrical polar

under the assumption of axisymmetry. Thus

the specific residuals associated with a two-dimensional surface in a three-dimensional domain

`comph=AxisymmetricDerivatives`