In[791]:= `u[lon, lat] := Cos[lon] * (1 + Cos[2 * lat])`
`v[lon, lat] := 0`
`Elonlon[lon, lat] := 1 / (R * Cos[lat]) * (D[u[lon, lat], lon] - v[lon, lat] * Sin[lat])`
`Elatlat[lon, lat] := 1 / R * D[v[lon, lat], lat]`
`Err[lon, lat] := 0`
`Elonlat[lon, lat] :=`
` 1 / (2 * R) * (D[u[lon, lat], lat] + u[lon, lat] * Tan[lat] + 1 / Cos[lat] * D[v[lon, lat], lon])`
`Elatr[lon, lat] := -3 / (2 * R) * v[lon, lat]`
`Elonr[lon, lat] := -3 / (2 * R) * u[lon, lat]`

In[799]:= `Elonlon[lon, lat]`

Out[799]= $-\dfrac{(1 + \text{Cos}[2\,\text{lat}])\,\text{Sec}[\text{lat}]\,\text{Sin}[\text{lon}]}{R}$

In[800]:= `Elatlat[lon, lat]`

Out[800]= 0

In[801]:= `Err[lon, lat]`

Out[801]= 0

In[802]:= `Elonlat[lon, lat]`

Out[802]= $\dfrac{-2\,\text{Cos}[\text{lon}]\,\text{Sin}[2\,\text{lat}] + (1 + \text{Cos}[2\,\text{lat}])\,\text{Cos}[\text{lon}]\,\text{Tan}[\text{lat}]}{2\,R}$

In[803]:= `Elatr[lon, lat]`

Out[803]= 0

In[804]:= `Elonr[lon, lat]`

Out[804]= $-\dfrac{3\,(1 + \text{Cos}[2\,\text{lat}])\,\text{Cos}[\text{lon}]}{2\,R}$