PVO computation 1

image(3)[3] u = image("../data/inputfile0.nrrd"); image(3)[3] v = image("../data/inputfile1.nrrd"); kernel #4 k = c4hexic: $field #4(3)[3]U = k \otimes u; field #4(3)[3]V = k \otimes v;$ field#4(3)[] G= $(\frac{V}{|V|}) \bullet (\frac{U}{|U|})$

1.1 best version

Probe Diderot-Dev -exec -readEinLatex -readEin1 PVO.diderot $\rightarrow_{flat} \frac{(v \bullet u)}{(|v| * |u|)}$

Gradient Diderot-Dev -exec -readEinLatex -readEin3 PVO.diderot

$$\rightarrow_{refactor} \big(\big(\frac{(u \bullet \nabla \otimes v)}{(|v|*|u|)} + \frac{(v \bullet \nabla \otimes u)}{(|u|*|v|)} \big) - \big(\frac{((u \bullet v)*(v \bullet \nabla \otimes v))}{(|v|*|u|*(v \bullet v))} + \frac{((u \bullet v)*(u \bullet \nabla \otimes u))}{(|u|*|v|*(u \bullet u))} \big) \big)$$

Hessian Diderot-Dev -exec -readEinLatex -readEin2 PVO.diderot

```
 \rightarrow_{match} \left( \frac{(2*|u|*(u\bullet v)*((u\bullet \nabla \otimes u)\otimes(u\bullet \nabla \otimes u)))}{(|v|*(u\bullet u)*((u\bullet v))^2)} + \frac{((u\bullet v)*((u\bullet \nabla \otimes u)\otimes(u\bullet \nabla \otimes u)))}{(|u|*|v|*((u\bullet u))^2)} + \frac{-((|u|*(u\bullet v)*(u\bullet \nabla \otimes \nabla \otimes u)))}{(|v|*(u\bullet u)*(u\bullet u))} + \frac{-((|u|*(u\bullet v)*((u\bullet \nabla \otimes v))))}{(|v|*(u\bullet u)*(u\bullet u))} + \frac{-((|u|*(u\bullet v)*((u\bullet \nabla \otimes u))))}{(|v|*(u\bullet u)*(u\bullet u))} + \frac{-(((v\bullet \nabla \otimes u)\otimes(v\bullet \nabla \otimes u))))}{(|u|*|v|*(u\bullet u))} + \frac{-(((v\bullet \nabla \otimes u)\otimes(v\bullet \nabla \otimes v)))}{(|u|*|v|*(u\bullet u))} + \frac{-(((v\bullet \nabla \otimes u)\otimes(v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet u)*(v\bullet \nabla \otimes v))} + \frac{-(((v\bullet \nabla \otimes u)\otimes(v\bullet \nabla \otimes v))))}{(|u|*|v|*(v\bullet v))} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((u|*|v|*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((u)*|v|*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v))))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes(v\bullet \nabla \otimes v)))}{((v|*|v|*(v\bullet v))^2)} + \frac{-(((u\bullet v)*((u\bullet v))\otimes(v\bullet \nabla \otimes v))}{((u\bullet v)*((u\bullet v))^2)} + \frac{-(((u\bullet v)*((
               \frac{(|u|*|v|*((v\bullet v))^2)}{(|v|*|v|*(v\bullet v))} + \frac{(|u|*|v|*(v\bullet v))}{(|u|*|v|*((v\bullet v))^2)} + \frac{(|v|*|u|*(v\bullet v))}{(|v|*|u|*(v\bullet v))} + \frac{(|v|*|u|*(v\bullet v))}{(|v|*|u|*(v\bullet v))} + \frac{(|v|*|u|*(v\bullet v))}{(|u|*|v|*((v\bullet v)))} + \frac{(|v|*|u|*(v\bullet v))}{(|u|*|v|*((v\bullet v)))} + \frac{(|v|*|u|*(v\bullet v))}{(|u|*|v|*((v\bullet v)))} + \frac{(|v|*|u|*(v\bullet v))}{(|v|*|u|*(v\bullet v))} + \frac{(|v|*|u|*(v\bullet v))}{(|v|*|u|*(
           \frac{(|v|*|u|*(v\bullet v))}{(|u|*|v|*(u\bullet v))} + \frac{(|u|*|v|*(u\bullet u))}{(|u|*|v|*(u\bullet u))}
\frac{((\nabla \otimes v)^T \bullet \nabla \otimes u)}{(|u|*|v|)} + \frac{-((((u\bullet \nabla \otimes v) \otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(v\bullet v)))})
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (|v|*|u|*(v\bullet v))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (|u|*|v|)
                                                                               (|u|*|v|)
```

Diderot-Dev -exec -readEinLatex -readEin4 PVO.diderot

1.2 Multiple rewrites

Diderot-Dev -exec -readEinLatex -readEinRewrite PVO.diderot

Each computation goes through four steps of rewriting \rightarrow . Here we list the output for all four steps. The most readable version varies with computation.

Probe
$$\rightarrow_{flat} \frac{(v \bullet u)}{(|v| * |u|)}$$

$$\rightarrow_{match} \frac{(v \bullet u)}{(|v| * |u|)}$$

$$\rightarrow_{refactor} \frac{(v \bullet u)}{(|v| * |u|)}$$

$$\rightarrow_{pull-division} (v \bullet u) * \frac{1}{(|v|*|u|)}$$

Gradient
$$\rightarrow_{flat} \left(\frac{-(((u \bullet v) * (u \bullet \nabla \otimes u)))}{(|u| * |v| * (u \bullet u))} + \frac{(v \bullet \nabla \otimes u)}{(|u| * |v|)} + \frac{-(((u \bullet v) * (v \bullet \nabla \otimes v)))}{(|v| * |u| * (v \bullet v))} + \frac{(u \bullet \nabla \otimes v)}{(|v| * |u|)} \right)$$

$$\rightarrow_{match} \left(\frac{-(((u \bullet v) * (u \bullet \nabla \otimes u)))}{(|u| * |v| * (u \bullet u))} + \frac{(v \bullet \nabla \otimes u)}{(|u| * |v|)} + \frac{-(((u \bullet v) * (v \bullet \nabla \otimes v)))}{(|v| * |u| * (v \bullet v))} + \frac{(u \bullet \nabla \otimes v)}{(|v| * |u|)} \right)$$

```
\rightarrow_{refactor} \big( \big( \frac{(u \bullet \nabla \otimes v)}{(|v|*|u|)} + \frac{(v \bullet \nabla \otimes u)}{(|u|*|v|)} \big) - \big( \frac{((u \bullet v)*(v \bullet \nabla \otimes v))}{(|v|*|u|*(v \bullet v))} + \frac{((u \bullet v)*(u \bullet \nabla \otimes u))}{(|u|*|v|*(u \bullet u))} \big) \big)
   \rightarrow_{pull-division} \left( \left( \left( u \bullet \nabla \otimes v \right) * \frac{1}{\left( |v| * |u| \right)} + \left( v \bullet \nabla \otimes u \right) * \frac{1}{\left( |u| * |v| \right)} \right) - \left( \left( \left( u \bullet v \right) * \left( v \bullet \nabla \otimes v \right) \right) * \frac{1}{\left( |v| * |u| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet \nabla \otimes v \right) \right) * \frac{1}{\left( |v| * |u| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet \nabla \otimes v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet \nabla \otimes v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet \nabla \otimes v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right) \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right)} + \left( \left( u \bullet v \right) * \left( v \bullet v \right) * \left( v \bullet v \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}{\left( |v| * \left( v \bullet v \right)} \right) * \frac{1}
   (v)*(u \bullet \nabla \otimes u))*\frac{1}{(|u|*|v|*(u \bullet u))})
       Hessian
    \begin{array}{l} \textbf{Hessian} \\ \rightarrow flat \left( \frac{(2*|u|*(u\bullet v)*((u\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes u)))}{((|u|)^2*|v|*(u\bullet u)*(u\bullet v))} + \frac{((u\bullet u)*(u\bullet v)*((u\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes u)))}{((|u|)^2*|v|*(u\bullet u)*(u\bullet v))} + \frac{-((|u|*(u\bullet u)*(u\bullet v)*(u\bullet \nabla \otimes v\otimes u)))}{((|u|)^2*|v|*(u\bullet u)*(u\bullet u))} + \frac{-((|u|*(u\bullet u)*(u\bullet v)*((v\bullet \nabla \otimes u))))}{((|u|)^2*|v|*(u\bullet u)*(u\bullet u))} + \frac{-((|u|*(u\bullet u)*(u\bullet v)*((v\bullet \nabla \otimes u))))}{((|u|)^2*|v|*(u\bullet u)*(u\bullet v))} + \frac{-((|u|*(u\bullet u)*(u\bullet v)*((v\bullet \nabla \otimes u))))}{((|u|*|v|*(u\bullet u)))} + \frac{-((|u|*(v\bullet v)*((u\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet u)*(v\bullet v))} + \frac{-((|u|*(v\bullet v)*(u\bullet v)*((v\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-(|u|*(v\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))))}{(|v|*|u|*(v\bullet v)*((v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*|v|*(u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*(u|*(v\bullet v)*((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))} + \frac{-((|v|*(u\bullet v)*((u\bullet v)*(
                                                                                                                                                              (|v|*|u|*|v|*|u|*((v \bullet v))^2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (|v|*|u|*(v\bullet v))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (|u|*|v|*(u \bullet u))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (|u|*|v|)
              \frac{(|v|*|u|*(v\bullet v))^{-}) \cdot (|v|*|u|*(v\bullet v))}{(|v|*|u|*(v\bullet v))} + \frac{((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes u))))}{(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes u))))} + \frac{((\nabla \otimes v)^{T}\bullet \nabla \otimes u)}{((v)*|u|*(v\bullet v))} + \frac{((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))})
                                                                                                                                                                                                                                                                                                                                                                                                (|v|*|u|*(u \bullet u))
    \rightarrow_{match} \left( \frac{(2*|u|*(u\bullet v)*((u\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes u)))}{(|v|*(u\bullet u)*((u\bullet v)*((u\bullet v)\otimes (u)))} + \frac{((u\bullet v)*((u\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes v)))}{(|u|*|v|*((u\bullet u))^2)} + \frac{-((|u|*(u\bullet v)*(u\bullet \nabla \otimes \nabla \otimes u)))}{(|v|*(u\bullet u)*(u\bullet u))} + \frac{-((|u|*(u\bullet v)*((\nabla \otimes u)^T\bullet \nabla \otimes u)))}{(|v|*(u\bullet u)*(u\bullet u))} + \frac{-(((u)*(u\bullet v)*((u\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes u))))}{(|v|*|v|*(u\bullet u))} + \frac{-(((u)*(v\bullet \nabla \otimes u)\otimes (u\bullet \nabla \otimes u))))}{(|u|*|v|*(u\bullet u))} + \frac{-((u)*(v\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v)))}{(|u|*|v|*(u\bullet u))} + \frac{-(((v\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet u))} + \frac{-(((v\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(u\bullet v))} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*(v\bullet v))^2} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*((v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|u|*|v|*((v\bullet v))^2)} + \frac{-(((u\bullet v)*((v\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes u)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-((((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-(((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v)))}{(|v|*|u|*(v\bullet v))} + \frac{-((u\bullet \nabla \otimes v)\otimes (v\bullet \nabla \otimes v))}{(|v|*|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (|u|*|v|)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (|u|*|v|*(u \bullet u))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (|v|*|u|*(v \bullet v))
              \frac{((\nabla \otimes v)^T \bullet \nabla \otimes u)}{((v) \bullet (v) \bullet (v))} + \frac{-((((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{((v) \bullet (v) \bullet (v))})
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (|u|*|v|*(v\bullet v))
       \rightarrow_{refactor} \big( \big( \frac{(((\nabla \otimes v)^T \bullet \nabla \otimes u) + (v \bullet \nabla \otimes \nabla \otimes u) + ((\nabla \otimes u)^T \bullet \nabla \otimes v) + (u \bullet \nabla \otimes \nabla \otimes v)}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (2 * (u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (2 * (u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (2 * (u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (2 * (u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|v| \bullet |v|)} + \frac{(((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet |v|)} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet |v|)} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet |v|)} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + ((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(|v| \bullet (v \bullet \nabla \otimes v))} + \frac{((u \bullet v) * ((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))}{(
           \rightarrow refactor \left( (\underbrace{(|u|*|v|)} (|u|*|v|*((v \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes u)))}_{((u \bullet v)*(|v| \bullet v|))} + \underbrace{((u \bullet v)*((u \bullet \nabla \otimes u) \otimes (v \bullet \nabla \otimes v)))}_{(|u|*|v|*((u \bullet u))^2)} + \underbrace{((u \bullet v)*((u \bullet \nabla \otimes u) \otimes (u \bullet \nabla \otimes u)))}_{(|u|*|v|*((u \bullet u))^2)} + \underbrace{(2*|u|*(u \bullet v)*((u \bullet \nabla \otimes u) \otimes (u \bullet \nabla \otimes u)))}_{(|v|*(u \bullet u)*((u \bullet v))^2)} \right) 
          \left(\frac{(((((v \bullet \nabla \otimes u) \otimes (v \bullet \nabla \otimes v))) + (((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))}{(|u| + |u| + (v \bullet v))} + \frac{((((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes u)))}{(|u| + |u| + ((u \bullet v) \otimes (u \bullet \nabla \otimes v)))} + \frac{((((v \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) + ((u \bullet v) * (v \bullet \nabla \otimes \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \otimes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (|v|*|u|*(u\bullet u))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (|v|*|u|*(v\bullet v))
                 (((((v \bullet \nabla \underline{\otimes} u) \otimes (u \bullet \nabla \underline{\otimes} u))) + (((u \bullet \nabla \underline{\otimes} u) \otimes (v \bullet \nabla \underline{\otimes} u))) + (((u \bullet \nabla \underline{\otimes} u) \otimes (u \bullet \nabla \underline{\otimes} v))))) \\ + \underbrace{((|u| * (u \bullet v) * (u \bullet \nabla \underline{\otimes} \nabla \underline{\otimes} u)) + (|u| * (u \bullet v) * ((\nabla \underline{\otimes} u)^T \bullet \nabla \underline{\otimes} u))))}_{(u)}))
 \rightarrow_{pull-division} ((((((\nabla \otimes v)^{T} \bullet \nabla \otimes u) + (v \bullet \nabla \otimes \nabla \otimes u) + ((\nabla \otimes u)^{T} \bullet \nabla \otimes v) + (u \bullet \nabla \otimes \nabla \otimes v)) * \frac{1}{(|u|*|v|)} + (((u \bullet v)*((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))) * \frac{1}{(|u|*|v|*((v \bullet v))^{2})} + ((u \bullet v)*((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))) * \frac{1}{(|u|*|v|*((v \bullet v))^{2})} + ((u \bullet v)*((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))) * \frac{1}{(|u|*|v|*((v \bullet v))^{2})} + ((u \bullet v)*((u \bullet \nabla \otimes u) \otimes (v \bullet \nabla \otimes v))) * \frac{1}{(|u|*|v|*((u \bullet u)*(v \bullet v)))} + ((u \bullet v)*((u \bullet \nabla \otimes u) \otimes (v \bullet \nabla \otimes v))) * \frac{1}{(|u|*|v|*((u \bullet u))^{2})} + (((((u \bullet \nabla \otimes u) \otimes (v \bullet \nabla \otimes v)))) * \frac{1}{(|v|*((u \bullet u))^{2})} + ((((((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))))) * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))} * \frac{1}{((v 
   \nabla \otimes u) \otimes (v \bullet \nabla \otimes v))) + (((u \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)))) * \frac{1}{(|u|*|v|*(v \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes u))) * \frac{1}{(|v|*|u|*(u \bullet u))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet u))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v)))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} + (((u \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) * \frac{1}{(|v|*|u|*(u \bullet v))} * \frac{1}{(|v|*|u
   ((((v \bullet \nabla \otimes v) \otimes (u \bullet \nabla \otimes v))) + ((u \bullet v) * (v \bullet \nabla \otimes \nabla \otimes v)) + ((u \bullet v) * ((\nabla \otimes v)^T \bullet \nabla \otimes v)) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v))) + (((v \bullet \nabla \otimes v) \otimes (v \bullet \nabla \otimes v)
   (v))))*\frac{1}{(|u|*|v|*(u\bullet u))} + ((|u|*(u\bullet v)*(u\bullet \nabla\otimes\nabla\otimes u)) + (|u|*(u\bullet v)*((\nabla\otimes u)^T\bullet\nabla\otimes u)))*\frac{1}{(|v|*(u\bullet u)*(u\bullet u))}))
```