In[•]:=
```
<< GeneralRelativityTensors`
```

In[•]:=
```
g = ToMetric[{"g", "g"}, {v, r, θ, ϕ}, {{-(1 - 2 G M / r), 1, 0, 0},
    {1, 0, 0, 0}, {0, 0, r^2, 0}, {0, 0, 0, r^2 Sin[θ]^2}}, "Greek"]
```

Out[•]= $g_{\alpha\beta}$

In[•]:=
```
g // TensorValues // MatrixForm
```

Out[•]//MatrixForm=

$$\begin{pmatrix} -1 + \frac{2GM}{r} & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & r^2 & 0 \\ 0 & 0 & 0 & r^2 \text{Sin}[\theta]^2 \end{pmatrix}$$

In[•]:=
```
χ = ToTensor["χ", g, {1, 0, 0, 0}]
```

Out[•]= χ^{α}

In[•]:=
```
dχ = MergeTensors[CovariantD[χ[-α], -γ], ActWith → Simplify]
```

Out[•]= $(((-1) \cdot (\Gamma \cdot \chi)) + (\partial \chi))_{\alpha\gamma}$

In[•]:=
```
dχ // TensorValues // MatrixForm
```

Out[•]//MatrixForm=

$$\begin{pmatrix} 0 & -\frac{GM}{r^2} & 0 & 0 \\ \frac{GM}{r^2} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

In[•]:=
```
ϵ = ToTensor["ϵ", g, Normal[LeviCivitaTensor[4]]]
```

Out[•]= $\epsilon^{\alpha\beta\gamma\delta}$

In[•]:= ϵ // TensorValues

Out[•]= {{{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}},
{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 1}, {0, 0, -1, 0}},
{{0, 0, 0, 0}, {0, 0, 0, -1}, {0, 0, 0, 0}, {0, 1, 0, 0}},
{{0, 0, 0, 0}, {0, 0, 1, 0}, {0, -1, 0, 0}, {0, 0, 0, 0}}},
{{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, -1}, {0, 0, 1, 0}},
{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}},
{{0, 0, 0, 1}, {0, 0, 0, 0}, {0, 0, 0, 0}, {-1, 0, 0, 0}},
{{0, 0, -1, 0}, {0, 0, 0, 0}, {1, 0, 0, 0}, {0, 0, 0, 0}}},
{{{0, 0, 0, 0}, {0, 0, 0, 1}, {0, 0, 0, 0}, {0, -1, 0, 0}},
{{0, 0, 0, -1}, {0, 0, 0, 0}, {0, 0, 0, 0}, {1, 0, 0, 0}},
{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}},
{{0, 1, 0, 0}, {-1, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}}},
{{{0, 0, 0, 0}, {0, 0, -1, 0}, {0, 1, 0, 0}, {0, 0, 0, 0}},
{{0, 0, 1, 0}, {0, 0, 0, 0}, {-1, 0, 0, 0}, {0, 0, 0, 0}},
{{0, -1, 0, 0}, {1, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}},
{{0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}, {0, 0, 0, 0}}}}

In[•]:= Ω = MergeTensors[ϵ[δ, α, β, γ] (dχ[-α, -β] - dχ[-β, -α]) χ[-γ]]

Out[•]= $(((-1)\cdot((((-1)\cdot(\Gamma\cdot\chi))+(\partial\chi))\cdot\epsilon)\cdot\chi))+((((-1)\cdot(\Gamma\cdot\chi))+(\partial\chi))\cdot\epsilon)\cdot\chi))^{\delta}$

In[•]:= Ω // TensorValues

Out[•]= {0, 0, 0, 0}