

```
In[24]:= Clear["Global`*"]
```

```
SetDirectory[];
```

```
In[26]:= SetDirectory["papers/math/dim2gr"];
```

```
<< GREAT.m
```

```
GREAT functions are: IMetric, Christoffel,  
Riemann, Ricci, SCurvature, EinsteinTensor, SqRicci, SqRiemann.
```

```
Enter 'helpGREAT' for this list of functions
```

```
In[28]:= x = {u, v}
```

```
Out[28]= {u, v}
```

```
In[34]:= z[u, v] := Sqrt[L^2 - u^2 - v^2]
```

```
In[35]:= (met = {{1 + (D[z[u, v], u])^2, D[z[u, v], u] * D[z[u, v], v]},  
               {D[z[u, v], u] * D[z[u, v], v], 1 + (D[z[u, v], v])^2}}) // MatrixForm
```

```
Out[35]//MatrixForm=
```

$$\begin{pmatrix} 1 + \frac{u^2}{L^2 - u^2 - v^2} & \frac{u v}{L^2 - u^2 - v^2} \\ \frac{u v}{L^2 - u^2 - v^2} & 1 + \frac{v^2}{L^2 - u^2 - v^2} \end{pmatrix}$$

```
In[36]:= SCurvature[met, x]
```

```
Out[36]=  $\frac{2}{L^2}$ 
```