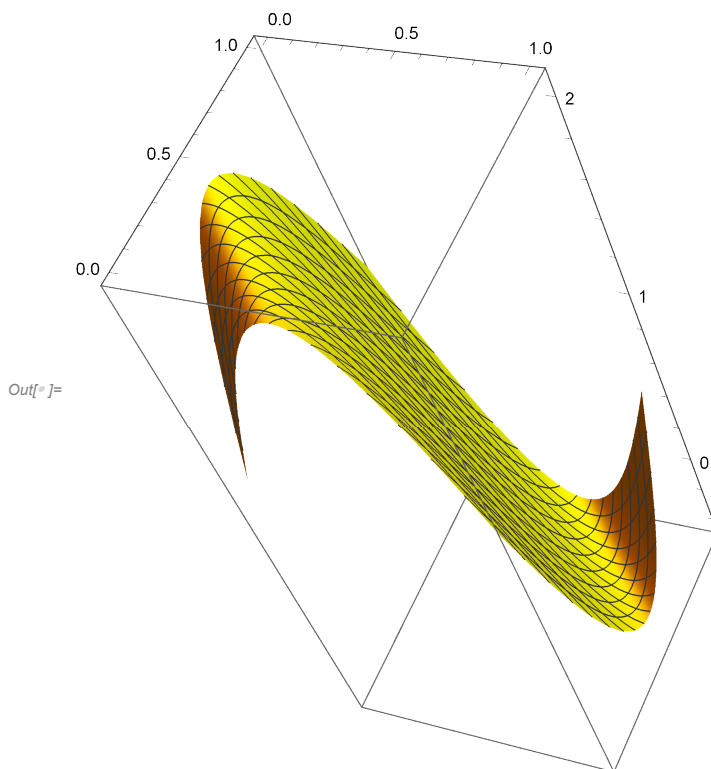


```
In[6]:= r[u_, v_] := {u, v, Sin[(u + v) Pi] +  $\frac{1}{u v + 1}$ }
```

```
In[6]:= S = ParametricPlot3D[r[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> Yellow]
```

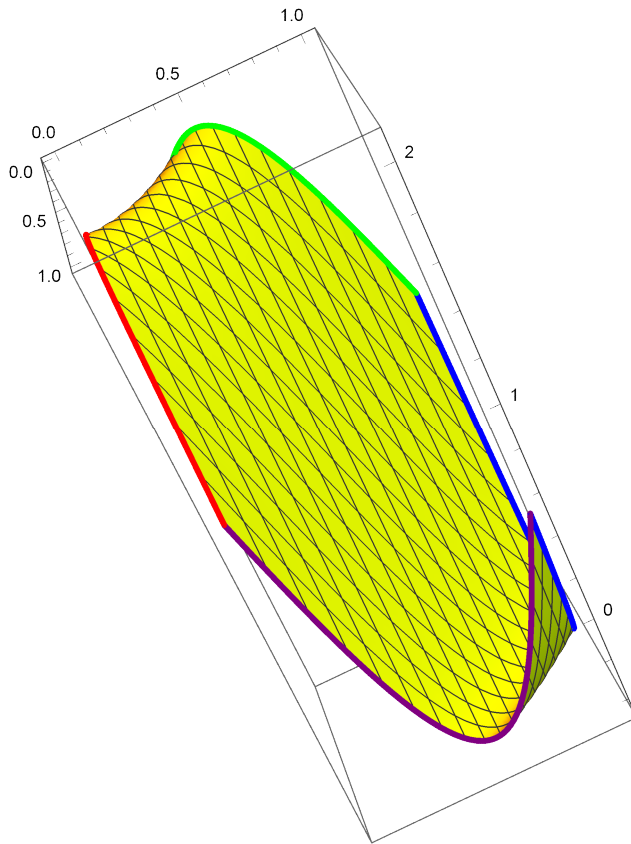


```
In[6]:= cu0[t_] := r[t, 0];
cu1[t_] := r[t, 1];
c0v[t_] := r[0, t];
c1v[t_] := r[1, t];
```

```
In[6]:= Cu0 = ParametricPlot3D[cu0[t], {t, 0, 1}, PlotStyle -> {Thickness[0.01], Red}];
Cu1 = ParametricPlot3D[cu1[t], {t, 0, 1}, PlotStyle -> {Thickness[0.01], Blue}];
C0v = ParametricPlot3D[c0v[t], {t, 0, 1}, PlotStyle -> {Thickness[0.01], Green}];
C1v = ParametricPlot3D[c1v[t], {t, 0, 1}, PlotStyle -> {Thickness[0.01], Purple}];
```

In[[ⓔ]]:= **Show[S, Cu0, Cu1, C0v, C1v]**

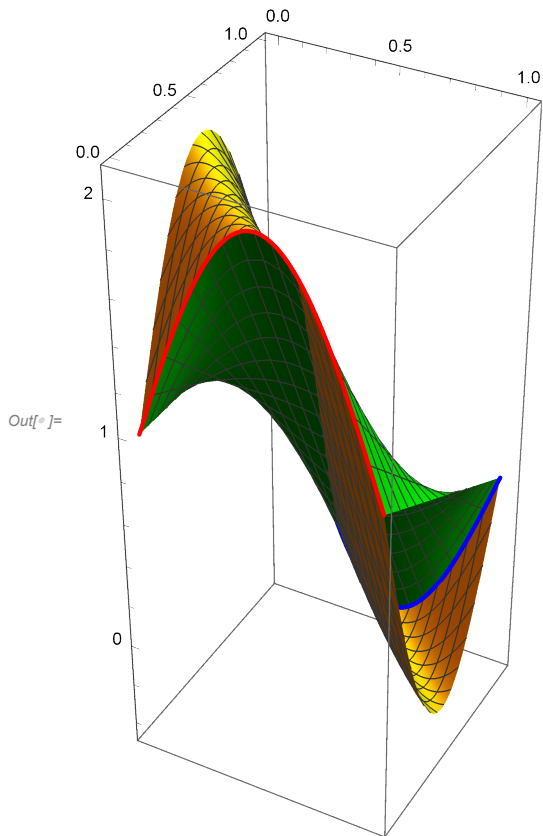
Out[[ⓔ]]:=



In[43]:= **r2[u_, v_] := (1 - v) r[u, 0] + v r[u, 1]**

In[44]:= **S2 = ParametricPlot3D[r2[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> Green];**

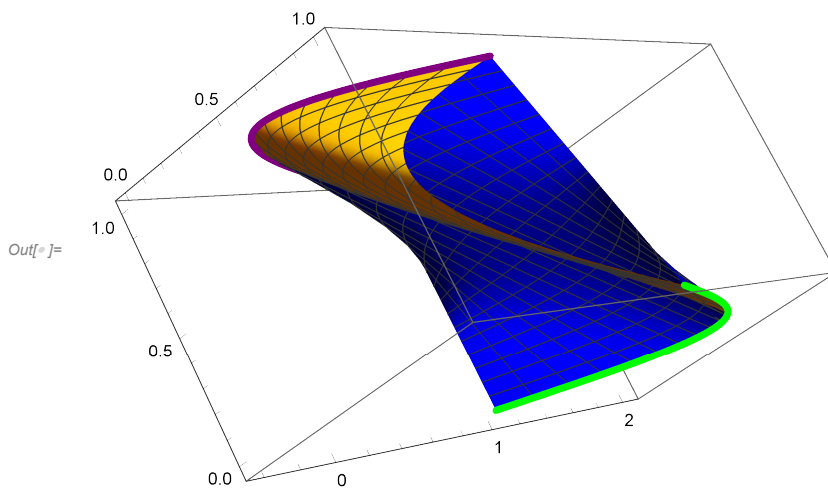
In[48]:= Show[S, S2, Cu0, Cu1]



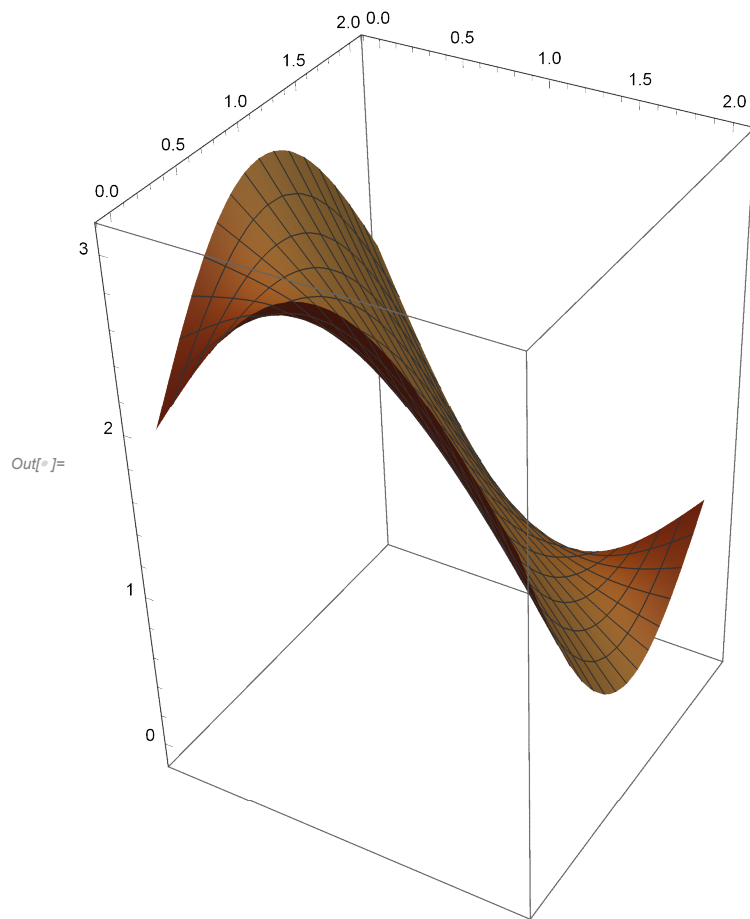
In[49]:= r1[u_, v_] := (1 - u) r[0, v] + u r[1, v]

In[50]:= S1 = ParametricPlot3D[r1[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> Blue];

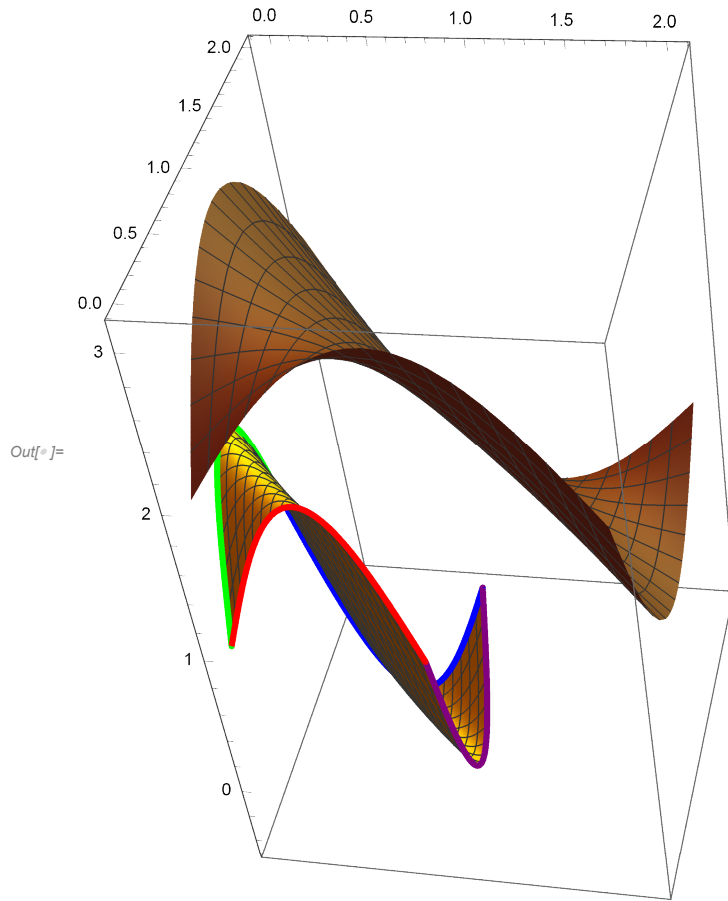
In[51]:= Show[S, S1, C0v, C1v]



```
In[52]:= S12 = ParametricPlot3D[r1[u, v] + r2[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> Brown]
```

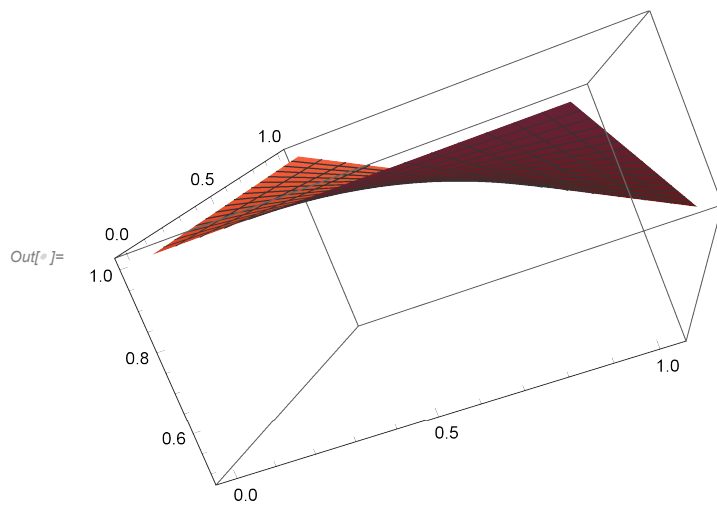


In[53]:= **Show[S12, S, Cu0, Cu1, C0v, C1v]**



In[54]:= **r3[u_, v_] := (1 - v) r1[u, 0] + v r1[u, 1]**

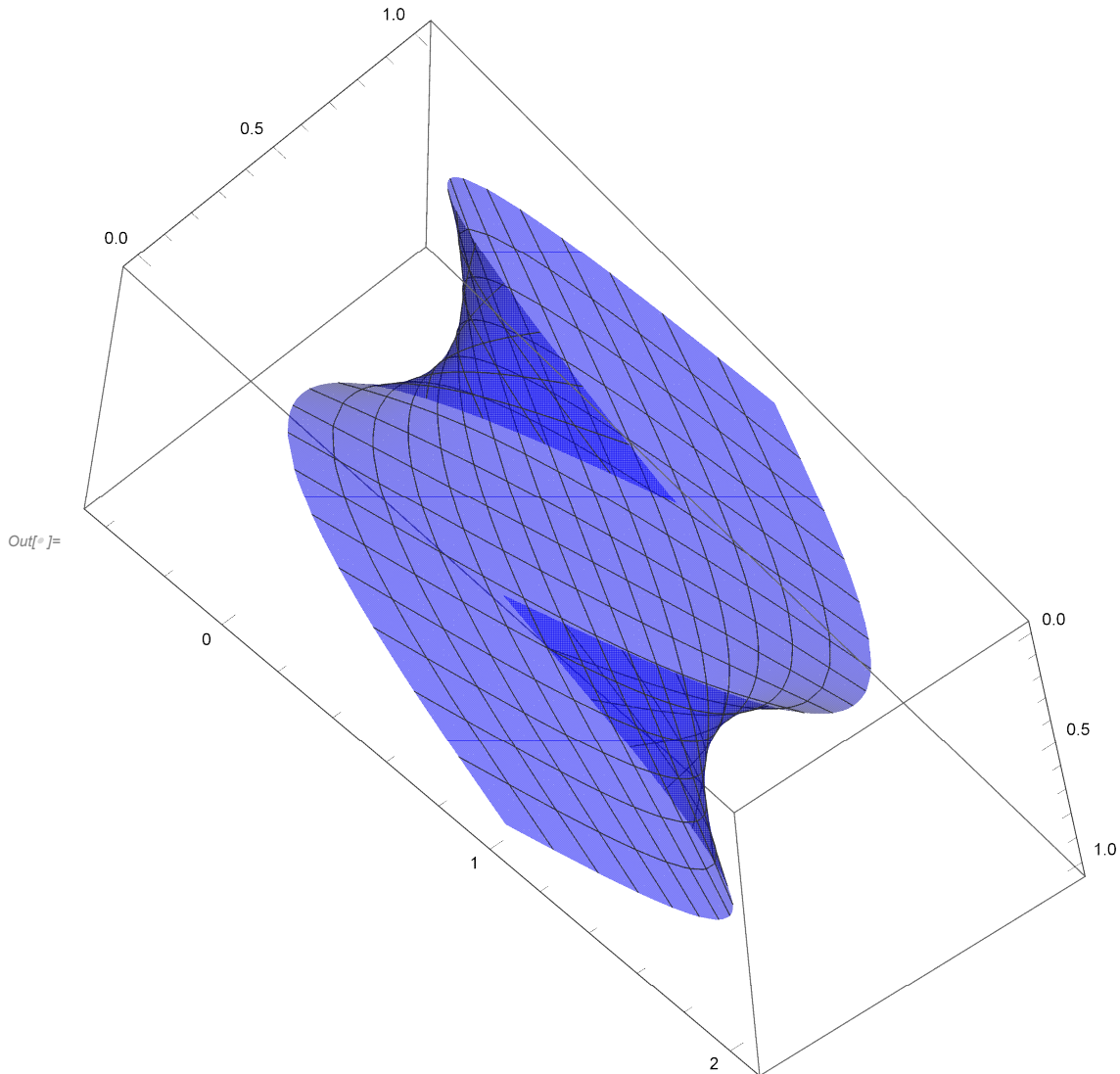
In[55]:= **S03 = ParametricPlot3D[r3[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> Pink]**



```
(*
r3[u,v] - (1-u) r2[0,v] - u r2[1,v] //Simplify
{0,0,0}
*)
```

```
In[56]:= Coons[u_, v_] := r1[u, v] + r2[u, v] - r3[u, v]
```

```
In[57]:= S3 = ParametricPlot3D[Coons[u, v], {u, 0, 1}, {v, 0, 1}, PlotStyle -> {Blue, Opacity[0.5]}]
```



```
In[58]:= Show[S, S3, C0v, C1v, Cu0, Cu1]
```

