```
RandSelfadjMatrix[l_] := Module[{A, i},
  A = RandomVariate[NormalDistribution[], {l, l}] +
    I * RandomVariate[NormalDistribution[], {l, l}];
  A = A + ConjugateTranspose[A];
  A = Chop[A];
  A]

RandPositive[l_, r_] := Module[{A},
  A = RandomVariate[NormalDistribution[], {l, r}] +
    I * RandomVariate[NormalDistribution[], {l, r}];
  A = A.ConjugateTranspose[A];
  A]

RandState[l_, r_] := Module[{A},
  A = RandPositive[l, r];
  A = A / Tr[A];
  A]

CostfromObservable[Observables_, transpose_] := Sum[
  MatrixPower[KroneckerProduct[Observables[[k]], IdentityMatrix[Length[Observables[[1]]]]] -
    KroneckerProduct[IdentityMatrix[Length[Observables[[1]]]], If[transpose,
      Transpose[Observables[[k]]], Observables[[k]]], 2], {k, 1, Length[Observables]}]

SaMCNB[dim_] :=
  SaMCNB[dim] = Flatten[{{Table[SparseArray[{{k, k} → 1, {dim, dim} → 0}], {k, 1, dim}]},
     Table[Table[SparseArray[{{k, m} → Sqrt[2] / 2, {m, k} → Sqrt[2] / 2, {dim, dim} → 0}],
       {m, k + 1, dim}], {k, 1, dim - 1}], Table[Table[SparseArray[{{k, m} → -I * Sqrt[2] / 2,
         {m, k} → I * Sqrt[2] / 2, {dim, dim} → 0}], {m, k + 1, dim}], {k, 1, dim - 1}]}, 2];

SaMPB[2] = {{{1, 0}, {0, 1}}, {{0, 1}, {1, 0}}, {{0, -I}, {I, 0}}, {{1, 0}, {0, -1}}};
SaMPB[dim_] := SaMPB[dim] = Flatten[Table[
     KroneckerProduct[SaMPB[dim / 2][[j]], SaMPB[2][[k]]], {j, 1, dim^2 / 4}, {k, 1, 4}], 1];

SaMPNB[dim_] := SaMPNB[dim] = SaMPB[dim] / Sqrt[dim];
```

```
QOT[ρ_, ω_, C_, dual_, transpose_] := Module[{dim, sol, Π, x, y, X, Y},
  dim = Length[ρ];
  If[
   dual, {x = Table[Symbol["x" <> ToString[n]], {n, dim^2}];
    y = Table[Symbol["y" <> ToString[n]], {n, dim^2}];
    sol = SemidefiniteOptimization[-Tr[(y.SaMCNB[dim]).ω + (x.SaMCNB[dim]).ρ],
      {VectorGreaterEqual[{C - KroneckerProduct[(y.SaMCNB[dim]), IdentityMatrix[dim]] -
          KroneckerProduct[IdentityMatrix[dim], If[transpose, Transpose[
             (x.SaMCNB[dim])], x.SaMCNB[dim]]], 0}, {"SemidefiniteCone", dim^2}]} ,
   Flatten[{x, y}]];
    X = Chop[sol[[1 ;; dim^2, 2]].SaMCNB[dim], 10^-3];
    Y = Chop[sol[[dim^2 + 1 ;; 2 * dim^2, 2]].SaMCNB[dim], 10^-3];
   Chop[Sqrt[Tr[X.ω + Y.ρ]], 10^-3], X // MatrixForm, Y // MatrixForm},

   {x = Table[Symbol["x" <> ToString[n]], {n, dim^4}];
    sol = SemidefiniteOptimization[Chop[Simplify[Tr[(x.SaMCNB[dim^2]).C]], 10^-3],
   {ResourceFunction["MatrixPartialTrace"][x.SaMCNB[dim^2], 2, {dim, dim}] == ω,
       ResourceFunction["MatrixPartialTrace"][x.SaMCNB[dim^2], 1, {dim, dim}] ==
        If[transpose, Transpose[ρ], ρ],
    VectorGreaterEqual[{x.SaMCNB[dim^2], 0}, {"SemidefiniteCone", dim^2}] },
   x];
   Π = Chop[Sum[sol[[n, 2]] SaMCNB[dim^2][[n]], {n, 1, dim^4}], 10^-3];
   Chop[Sqrt[Tr[C.Π]], 10^-3], Π // MatrixForm}]]
```

```
ModQOT [ρ_, ω_, cost_, dual_, transpose_] := Sqrt[QOT[ρ, ω, cost, dual, transpose][[1]]^2 -
    (QOT[ρ, ρ, cost, dual, transpose][[1]]^2 + QOT[ω, ω, cost, dual, transpose][[1]]^2) / 2]
```

```
TriIneq[ρ_, ω_, τ_, C_, dual_, transpose_] := ModQOT[ρ, ω, C, dual, transpose] +
  ModQOT[ω, τ, C, dual, transpose] - ModQOT[ρ, τ, C, dual, transpose]
```

```
ρ01 = 1 / 2 * {1, 1 / Sqrt[2], 1 / Sqrt[3], 0}.SaMPB[2]
```

$$\left\{\left\{\frac{1}{2}, \frac{1}{2}\left(\frac{1}{\sqrt{2}} - \frac{i}{\sqrt{3}}\right)\right\}, \left\{\frac{1}{2}\left(\frac{1}{\sqrt{2}} + \frac{i}{\sqrt{3}}\right), \frac{1}{2}\right\}\right\}$$

```
τ01 = 1 / 2 * {1, 0, 1 / 3, 1 / 4}.SaMPB[2]
```

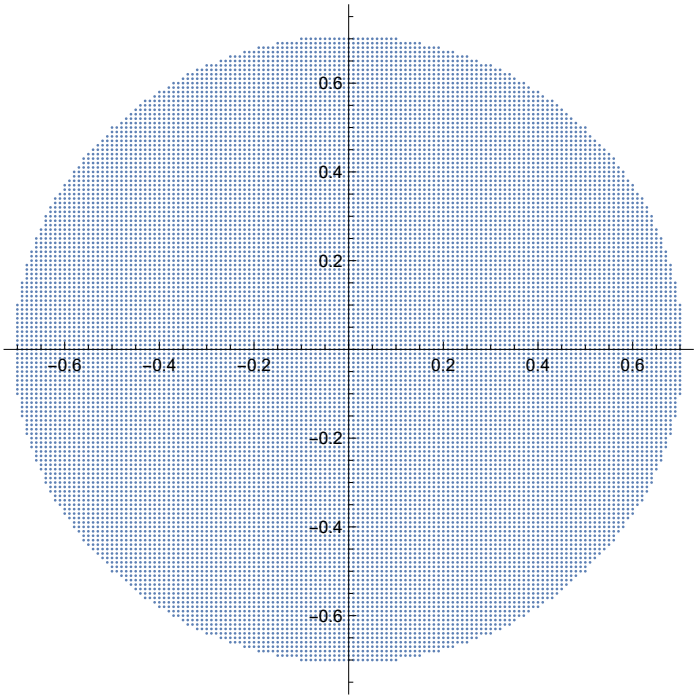
$$\left\{\left\{\frac{5}{8}, -\frac{i}{6}\right\}, \left\{\frac{i}{6}, \frac{3}{8}\right\}\right\}$$

```
step1 = 0.01;
```

```
coordinates1 = Select[Flatten[Table[{x, y}, {x, -1, 1, step1}, {y, -1, 1, step1}], 1],
   PositiveSemidefiniteMatrixQ[ 1 / 2 * (Flatten[{1, #, 1 / Sqrt[2]}]).SaMPB[2]] &];
```

In[ ]:=
```
ListPlot[coordinates1, AspectRatio → 1]
```

Out[ ]=



In[ ]:=
```
Cost1 = CostfromObservable[SaMPB[2]⟦{2, 4}⟧, True]
```

Out[ ]=
```
{{2, 0, 0, -2}, {0, 6, -2, 0}, {0, -2, 6, 0}, {-2, 0, 0, 2}}
```

In[ ]:=
```
ω1 = 1 / 2 * (Flatten[{1, #, 1 / Sqrt[2]}]).SaMPB[2] & /@ coordinates1;
```

In[ ]:=
```
Off[SemidefiniteOptimization::parsuc]
```

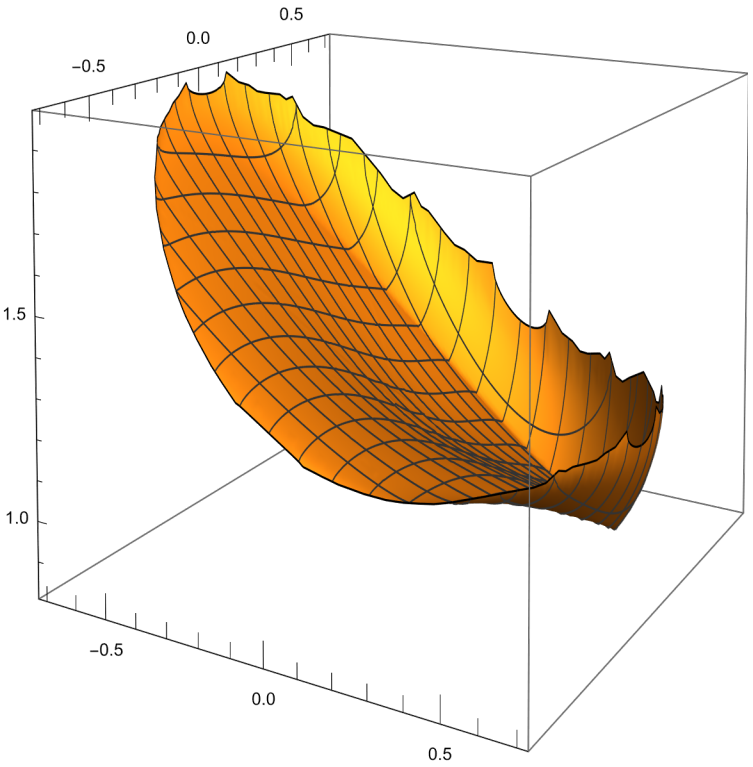
In[ ]:=
```
{time1, result1} = AbsoluteTiming[TriIneq[ρ0, #, τ0, Cost1, False, True] & /@ ω1];
```

In[ ]:=
```
time1 / 3600
```

Out[ ]=
```
0.666655
```

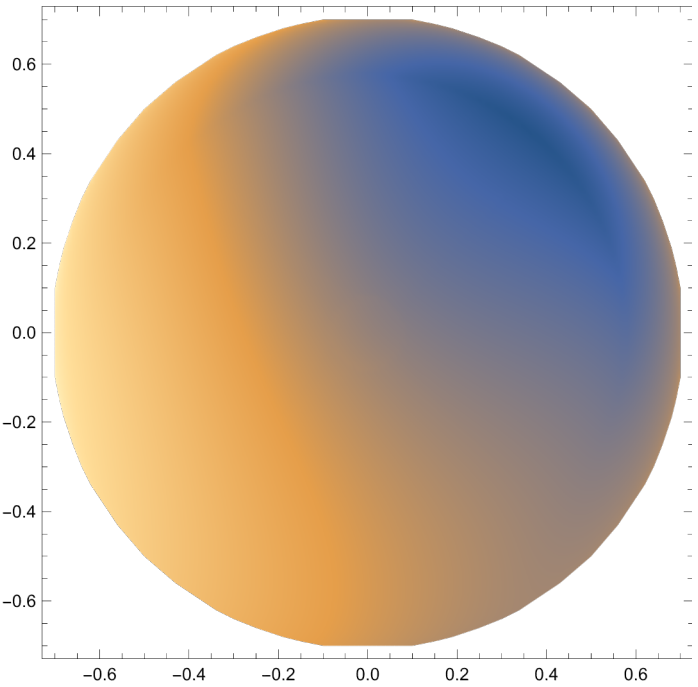
In[7]:=
```
ListPlot3D[Join[coordinates1, Transpose@{result1}, 2], AspectRatio → 1]
```

Out[•]=



In[•]:=
```
ListDensityPlot[Join[coordinates1, Transpose@{result1}, 2], AspectRatio → 1]
```

Out[•]=



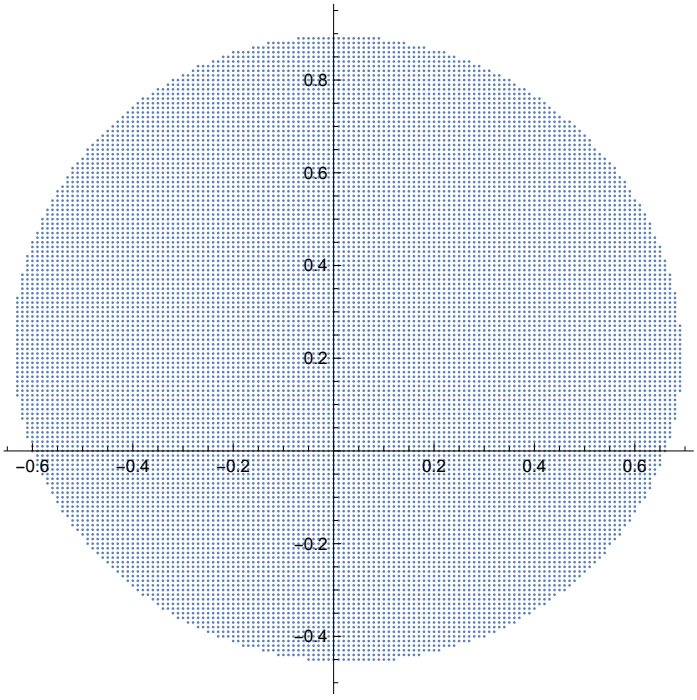
In[•]:=
```
Max[Abs[Im[result1]]]
```

Out[•]=
```
0
```

```
In[•]:= Min[result1]
Out[•]= 0.832397
```

```
In[•]:= ρ02 = 1 / 4 * {1, 0, 0, 0, 0, 0.1, 0, 0, 0.2, 0, 0, 0, 0.3, 0, 0, 0}.SaMPB[4]
Out[•]= {{0.325 + 0. i, 0. + 0. i, 0. - 0.05 i, 0.025 + 0. i},
         {0. + 0. i, 0.325 + 0. i, 0.025 + 0. i, 0. - 0.05 i},
         {0. + 0.05 i, 0.025 + 0. i, 0.175 + 0. i, 0. + 0. i},
         {0.025 + 0. i, 0. + 0.05 i, 0. + 0. i, 0.175 + 0. i}}

In[•]:= τ02 = 1 / 4 * {1, 0, 0, 0.3, 0, 0, 0, 0.2, 0, 0, 0, 0, 0.1, 0, 0, 0}.SaMPB[4]
Out[•]= {{0.35 + 0. i, 0. + 0. i, 0.05 + 0. i, 0. + 0. i}, {0. + 0. i, 0.2 + 0. i, 0. + 0. i, -0.05 + 0. i},
         {0.05 + 0. i, 0. + 0. i, 0.3 + 0. i, 0. + 0. i}, {0. + 0. i, -0.05 + 0. i, 0. + 0. i, 0.15 + 0. i}}

In[•]:= step2 = 0.01;

In[•]:= coordinates2 = Select[Flatten[Table[{x, y}, {x, -1, 1, step2}, {y, -1, 1, step2}], 1],
          PositiveSemidefiniteMatrixQ[
            1 / 4 * (Flatten[{1, #, 0, 0.1, 0.1, 0.1, 0, 0.3, 0, 0.2, 0, 0, 0, 0, 0}]).SaMPB[4]] &];

In[•]:= ListPlot[coordinates2, AspectRatio → 1]
```

Out[•]=



```
In[•]:= Cost2 = CostfromObservable[SaMPB[4][[2 ;; 16]], True]
```

```
Out[•]= {{24, 0, 0, 0, 0, -8, 0, 0, 0, 0, -8, 0, 0, 0, 0, -8},
 {0, 32, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 32, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
 {0, 0, 0, 32, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 32, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
 {-8, 0, 0, 0, 0, 24, 0, 0, 0, 0, -8, 0, 0, 0, 0, -8},
 {0, 0, 0, 0, 0, 0, 32, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 32, 0, 0, 0, 0, 0, 0, 0, 0},
 {0, 0, 0, 0, 0, 0, 0, 0, 32, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 32, 0, 0, 0, 0, 0, 0},
 {-8, 0, 0, 0, 0, -8, 0, 0, 0, 0, 24, 0, 0, 0, 0, -8},
 {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 32, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 32, 0, 0, 0},
 {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 32, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 32, 0},
 {-8, 0, 0, 0, 0, -8, 0, 0, 0, 0, -8, 0, 0, 0, 0, 24}}
```

```
In[•]:= Cost2 // MatrixForm
```

```
Out[•]//MatrixForm=
⎛ 24   0   0   0   0  -8   0   0   0   0  -8   0   0   0   0  -8 ⎞
⎜  0  32   0   0   0   0   0   0   0   0   0   0   0   0   0   0 ⎟
⎜  0   0  32   0   0   0   0   0   0   0   0   0   0   0   0   0 ⎟
⎜  0   0   0  32   0   0   0   0   0   0   0   0   0   0   0   0 ⎟
⎜  0   0   0   0  32   0   0   0   0   0   0   0   0   0   0   0 ⎟
⎜ -8   0   0   0   0  24   0   0   0   0  -8   0   0   0   0  -8 ⎟
⎜  0   0   0   0   0   0  32   0   0   0   0   0   0   0   0   0 ⎟
⎜  0   0   0   0   0   0   0  32   0   0   0   0   0   0   0   0 ⎟
⎜  0   0   0   0   0   0   0   0  32   0   0   0   0   0   0   0 ⎟
⎜  0   0   0   0   0   0   0   0   0  32   0   0   0   0   0   0 ⎟
⎜ -8   0   0   0   0  -8   0   0   0   0  24   0   0   0   0  -8 ⎟
⎜  0   0   0   0   0   0   0   0   0   0   0  32   0   0   0   0 ⎟
⎜  0   0   0   0   0   0   0   0   0   0   0   0  32   0   0   0 ⎟
⎜  0   0   0   0   0   0   0   0   0   0   0   0   0  32   0   0 ⎟
⎜  0   0   0   0   0   0   0   0   0   0   0   0   0   0  32   0 ⎟
⎝ -8   0   0   0   0  -8   0   0   0   0  -8   0   0   0   0  24 ⎠
```

```
In[•]:= ω2 = 1 / 4 * (Flatten[{1, #, 0, 0.1, 0.1, 0.1, 0, 0.3, 0, 0.2, 0, 0, 0, 0, 0}]).SaMPB[4] & /@
          coordinates2;
```

```
In[•]:= Off[SemidefiniteOptimization::parsuc]
```

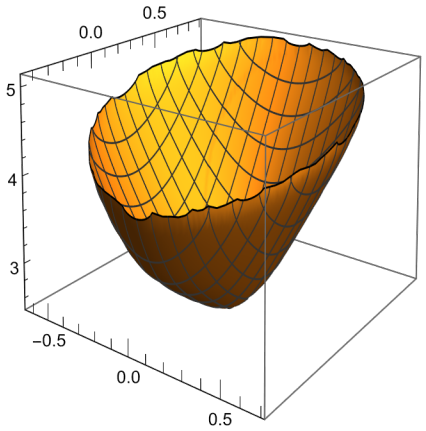
```
In[•]:= {time2, result2} = AbsoluteTiming[TriIneq[ρ02, #, τ02, Cost2, False, True] & /@ ω2];
```

```
In[•]:= time2 / 3600
```

```
Out[•]= 13.1223
```

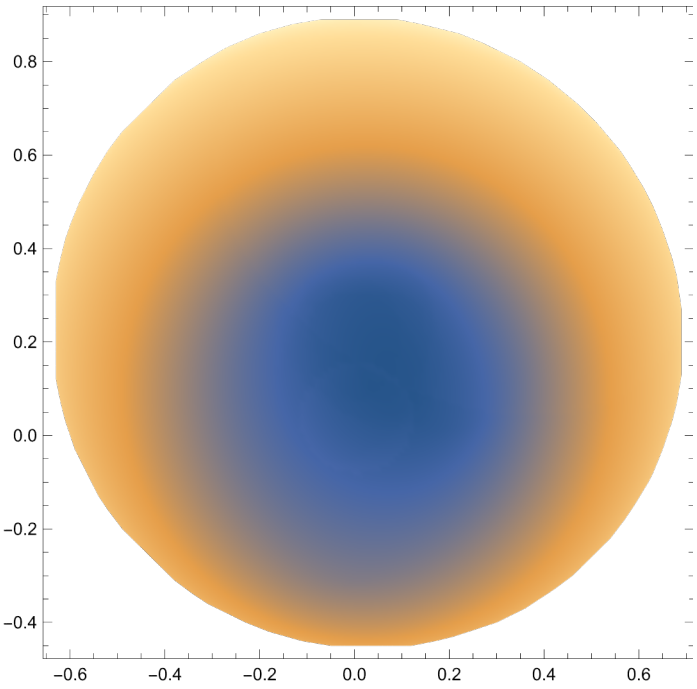
In[6]:=
```
ListPlot3D[Join[coordinates2, Transpose@{result2}, 2], AspectRatio → 1]
```

Out[•]=



In[•]:=
```
ListDensityPlot[Join[coordinates2, Transpose@{result2}, 2], AspectRatio → 1]
```

Out[•]=



In[•]:=
```
Max[Abs[Im[result2]]]
```

Out[•]=
```
0
```

In[•]:=
```
Min[result2]
```

Out[•]=
```
2.51399
```

In[•]:=
```
ρ03 = RandState[2, 2]
```

Out[•]=
```
{{0.873149 + 0. i, −0.279734 + 0.0887207 i}, {−0.279734 − 0.0887207 i, 0.126851 + 0. i}}
```

In[•]:=
```
% // MatrixForm
```

Out[•]//MatrixForm=

$$\begin{pmatrix} 0.873149 + 0.\,i & -0.279734 + 0.0887207\,i \\ -0.279734 - 0.0887207\,i & 0.126851 + 0.\,i \end{pmatrix}$$

In[•]:=
```
τ03 = RandState[2, 2]
```

Out[•]=
```
{{0.941077 + 0. i, -0.204803 + 0.0294567 i}, {-0.204803 - 0.0294567 i, 0.0589231 + 0. i}}
```

In[•]:=
```
% // MatrixForm
```

Out[•]//MatrixForm=

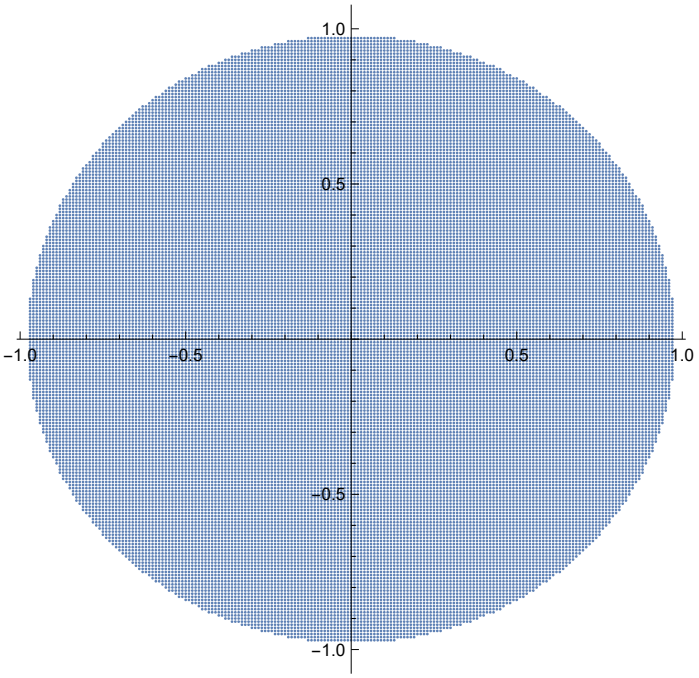
$$\begin{pmatrix} 0.941077 + 0.\,i & -0.204803 + 0.0294567\,i \\ -0.204803 - 0.0294567\,i & 0.0589231 + 0.\,i \end{pmatrix}$$

In[•]:=
```
step3 = 0.01;
```

In[•]:=
```
coordinates3 = Select[Flatten[Table[{x, y}, {x, -1, 1, step3}, {y, -1, 1, step3}], 1],
    PositiveSemidefiniteMatrixQ[ 1 / 2 * (Flatten[{1, #, 0.2}]).SaMPB[2]] &];
```

In[•]:=
```
ListPlot[coordinates3, AspectRatio → 1]
```

Out[•]=



In[•]:=
```
Cost3 = CostfromObservable[
  {RandSelfadjMatrix[2], RandSelfadjMatrix[2], RandSelfadjMatrix[2]}, True]
```

Out[•]=
```
{{12.9344 + 0. i, 0.207107 + 0.371762 i, 0.207107 - 0.371762 i, -12.9344 + 0. i},
 {0.207107 - 0.371762 i, 57.2756 + 0. i, -12.6113 + 1.07134 i, -0.207107 + 0.371762 i},
 {0.207107 + 0.371762 i, -12.6113 - 1.07134 i, 57.2756 + 0. i, -0.207107 - 0.371762 i},
 {-12.9344 + 0. i, -0.207107 - 0.371762 i, -0.207107 + 0.371762 i, 12.9344 + 0. i}}
```

In[ ]:=
```
% // MatrixForm
```

Out[ ]//MatrixForm=

$$\begin{pmatrix} 12.9344 + 0.\,i & 0.207107 + 0.371762\,i & 0.207107 - 0.371762\,i & -12.9344 + 0.\,i \\ 0.207107 - 0.371762\,i & 57.2756 + 0.\,i & -12.6113 + 1.07134\,i & -0.207107 + 0.371762\,i \\ 0.207107 + 0.371762\,i & -12.6113 - 1.07134\,i & 57.2756 + 0.\,i & -0.207107 - 0.371762\,i \\ -12.9344 + 0.\,i & -0.207107 - 0.371762\,i & -0.207107 + 0.371762\,i & 12.9344 + 0.\,i \end{pmatrix}$$

In[ ]:=
```
ω3 = 1 / 2 * (Flatten[{1, #, 0.2}]).SaMPB[2] & /@ coordinates3;
```

In[ ]:=
```
Off[SemidefiniteOptimization::parsuc]
```

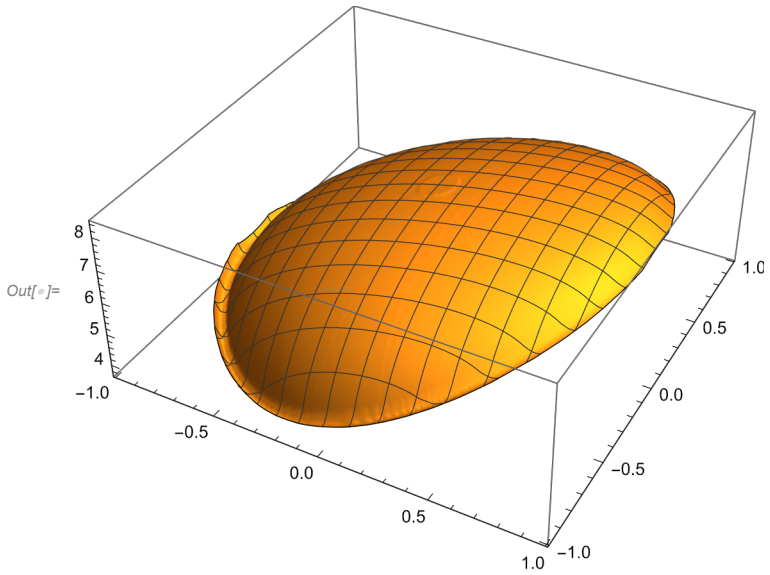
In[ ]:=
```
{time3, result3} = AbsoluteTiming[TriIneq[ρ03, #, τ03, Cost3, False, True] & /@ ω3];
```

In[ ]:=
```
time3 / 3600
```

Out[ ]=
```
1.42924
```

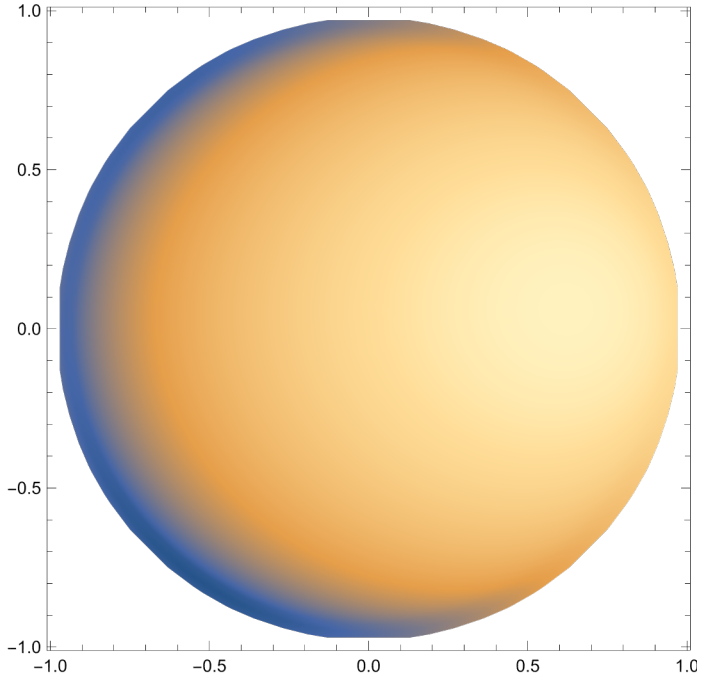
In[5]:=
```
ListPlot3D[Join[coordinates3, Transpose@{result3}, 2]]
```

Out[ ]=



In[ ]:=
```
ListDensityPlot[Join[coordinates3, Transpose@{result3}, 2]]
```

Out[ ]=



In[ ]:=
```
Max[Abs[Im[result3]]]
```

Out[ ]=
```
0
```

In[ ]:=
```
Min[result3]
```

Out[ ]=
```
3.71871
```

In[ ]:=
```
ρ04 = RandState[4, 4]
```

Out[ ]=
```
{{0.0718617 + 0. i, -0.0388539 + 0.112849 i,
  -0.0649472 + 0.0410115 i, -0.0329795 - 0.0212718 i},
 {-0.0388539 - 0.112849 i, 0.432019 + 0. i, 0.141496 - 0.0000971459 i, 0.0452387 + 0.0594228 i},
 {-0.0649472 - 0.0410115 i, 0.141496 + 0.0000971459 i,
  0.303302 + 0. i, 0.0650013 - 0.0223743 i},
 {-0.0329795 + 0.0212718 i, 0.0452387 - 0.0594228 i, 0.0650013 + 0.0223743 i, 0.192817 + 0. i}}
```

In[ ]:=
```
% // MatrixForm
```

Out[ ]//MatrixForm=

$$\begin{pmatrix} 0.0718617 + 0.\,i & -0.0388539 + 0.112849\,i & -0.0649472 + 0.0410115\,i & -0.0329795 - 0.02 \\ -0.0388539 - 0.112849\,i & 0.432019 + 0.\,i & 0.141496 - 0.0000971459\,i & 0.0452387 + 0.05 \\ -0.0649472 - 0.0410115\,i & 0.141496 + 0.0000971459\,i & 0.303302 + 0.\,i & 0.0650013 - 0.02 \\ -0.0329795 + 0.0212718\,i & 0.0452387 - 0.0594228\,i & 0.0650013 + 0.0223743\,i & 0.192817 + 0 \end{pmatrix}$$

In[•]:=
```
τ04 = RandState[4, 4]
```

Out[•]=
```
{{0.187318 + 0. i, 0.0431051 + 0.0604621 i, -0.067781 - 0.0548287 i, 0.0264342 - 0.172235 i},
 {0.0431051 - 0.0604621 i, 0.281131 + 0. i, -0.0906402 + 0.0201966 i, -0.0152662 - 0.0305359 i},
 {-0.067781 + 0.0548287 i, -0.0906402 - 0.0201966 i,
  0.101031 + 0. i, -0.00417941 + 0.0149378 i},
 {0.0264342 + 0.172235 i, -0.0152662 + 0.0305359 i, -0.00417941 - 0.0149378 i, 0.43052 + 0. i}}
```

In[•]:=
```
% // MatrixForm
```

Out[•]//MatrixForm=

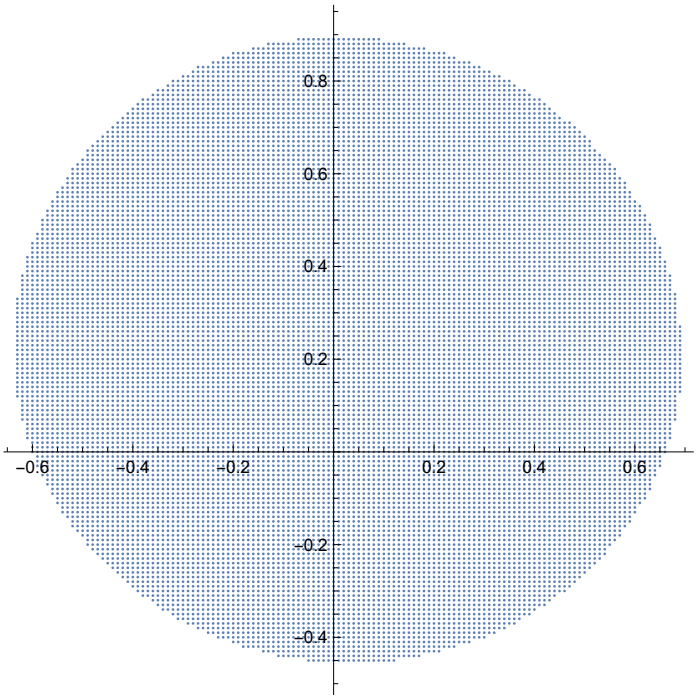
$$\begin{pmatrix} 0.187318 + 0.\,i & 0.0431051 + 0.0604621\,i & -0.067781 - 0.0548287\,i & 0.0264342 - 0.172 \\ 0.0431051 - 0.0604621\,i & 0.281131 + 0.\,i & -0.0906402 + 0.0201966\,i & -0.0152662 - 0.030 \\ -0.067781 + 0.0548287\,i & -0.0906402 - 0.0201966\,i & 0.101031 + 0.\,i & -0.00417941 + 0.01 \\ 0.0264342 + 0.172235\,i & -0.0152662 + 0.0305359\,i & -0.00417941 - 0.0149378\,i & 0.43052 + 0. \end{pmatrix}$$

In[•]:=
```
step4 = 0.01;
```

In[•]:=
```
coordinates4 = Select[Flatten[Table[{x, y}, {x, -1, 1, step4}, {y, -1, 1, step4}], 1],
   PositiveSemidefiniteMatrixQ[
     1 / 4 * (Flatten[{1, #, 0, 0.1, 0.1, 0.1, 0, 0.3, 0, 0.2, 0, 0, 0, 0, 0}]).SaMPB[4]] &];
```

In[•]:=
```
ListPlot[coordinates4, AspectRatio → 1]
```

Out[•]=



In[•]:=
```
Cost4 = CostfromObservable[{RandSelfadjMatrix[4], RandSelfadjMatrix[4],
     RandSelfadjMatrix[4], RandSelfadjMatrix[4], RandSelfadjMatrix[4]}, True];
```

```
In[ ]:= Round[Cost4, 1] // MatrixForm
```

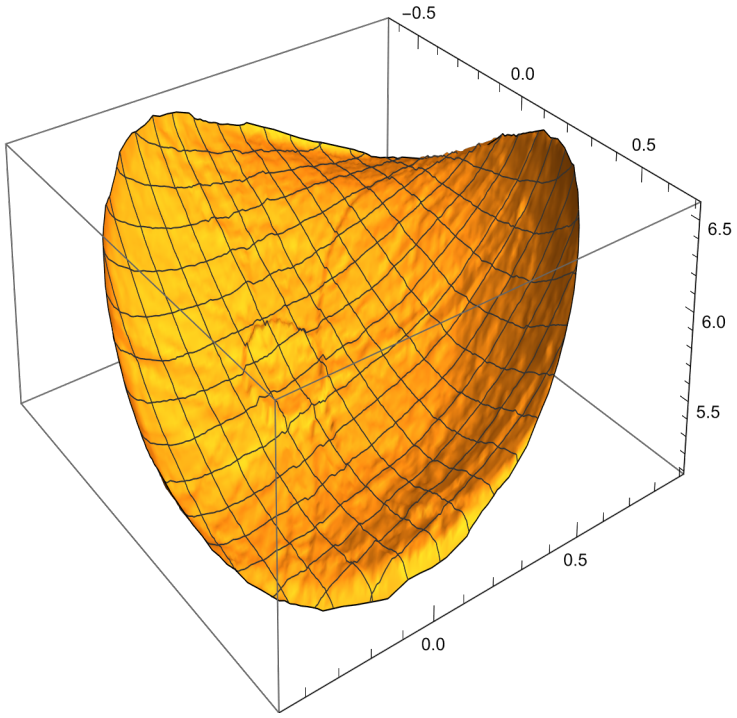
Out[ ]//MatrixForm=

75	$-5\,i$	$10+16\,i$	$6-6\,i$	$5\,i$	-22	$10-i$	$9-2\,i$	$10-16\,i$	10
$5\,i$	108	$16+9\,i$	$2+8\,i$	$5-2\,i$	$12+8\,i$	$-4+12\,i$	$3-6\,i$	$7-12\,i$	-4
$10-16\,i$	$16-9\,i$	171	$-34-18\,i$	$7-12\,i$	$6-9\,i$	$14-15\,i$	$-11-6\,i$	$-10+15\,i$	$2+$
$6+6\,i$	$2-8\,i$	$-34+18\,i$	113	$7\,i$	$-6+12\,i$	-8	$2-8\,i$	$-11-6\,i$	-4
$-5\,i$	$5+2\,i$	$7+12\,i$	$-7\,i$	108	$12-8\,i$	$-4+4\,i$	$-4+6\,i$	$16-9\,i$	-4
-22	$12-8\,i$	$6+9\,i$	$-6-12\,i$	$12+8\,i$	92	-5	$-7+12\,i$	$6-9\,i$	
$10+i$	$-4-12\,i$	$14+15\,i$	-8	$-4-4\,i$	-5	140	$-12-21\,i$	$2+7\,i$	-1
$9+2\,i$	$3+6\,i$	$-11+6\,i$	$2+8\,i$	$-4-6\,i$	$-7-12\,i$	$-12+21\,i$	124	$-2+11\,i$	-1
$10+16\,i$	$7+12\,i$	$-10-15\,i$	$-11+6\,i$	$16+9\,i$	$6+9\,i$	$2-7\,i$	$-2-11\,i$	171	$14+$
$10-i$	$-4+4\,i$	$2-7\,i$	$-4+6\,i$	$-4+12\,i$	-5	$-1-8\,i$	$-15-i$	$14-15\,i$	1
-25	$12\,i$	$-18-10\,i$	$-1+13\,i$	$-12\,i$	-46	$-1+17\,i$	$7-15\,i$	$-18+10\,i$	-1
$2-15\,i$	$8-11\,i$	$18+10\,i$	$-2+2\,i$	$1+3\,i$	$10+18\,i$	$-11+22\,i$	$17+25\,i$	$-8-6\,i$	-13
$6-6\,i$	$-7\,i$	$-11+6\,i$	$21+11\,i$	$2+8\,i$	$-6-12\,i$	$-4+6\,i$	$7+12\,i$	$-34-18\,i$	
$9-2\,i$	$-4+6\,i$	$-2-11\,i$	$7+12\,i$	$3-6\,i$	$-7+12\,i$	$-15-i$	$8-7\,i$	$-11-6\,i$	-12
$2+15\,i$	$1-3\,i$	$-8+6\,i$	$15-6\,i$	$8+11\,i$	$10-18\,i$	$-13+8\,i$	$15-7\,i$	$18-10\,i$	-11
-29	$-11+i$	$3-14\,i$	$1+6\,i$	$-11-i$	-25	$-4-16\,i$	$-9+5\,i$	$3+14\,i$	$-4+$

```
In[ ]:= ω4 = 1 / 4 * (Flatten[{1, #, 0, 0.1, 0.1, 0.1, 0, 0.3, 0, 0.2, 0, 0, 0, 0, 0}]).SaMPB[4] & /@
          coordinates4;

In[ ]:= Off[SemidefiniteOptimization::parsuc]

In[ ]:= {time4, result4} = AbsoluteTiming[TriIneq[ρ04, #, τ04, Cost4, False, True] & /@ ω4];

In[ ]:= time4 / 3600

Out[ ]= 12.4241
```

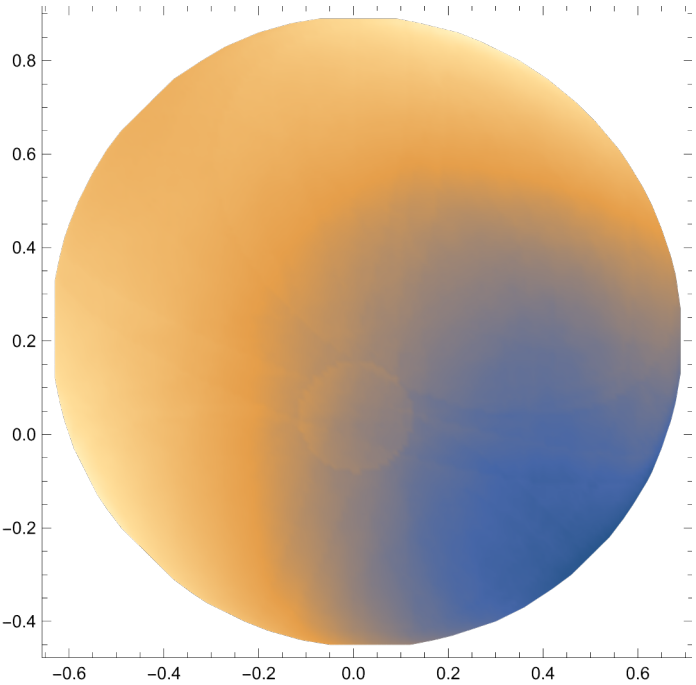
In[4]:=
```
ListPlot3D[Join[coordinates4, Transpose@{result4}, 2], AspectRatio → 1]
```

Out[•]=



In[•]:=
```
ListDensityPlot[Join[coordinates4, Transpose@{result4}, 2], AspectRatio → 1]
```

Out[•]=



In[•]:=
```
Max[Abs[Im[result4]]]
```

Out[•]=
```
0
```

In[•]:=
```
Min[result4]
```

Out[•]=
```
5.11249
```