

```

In[135]:= Off[Power::infy]
SetDirectory [NotebookDirectory []];
<< GridMethod2D_PA.m
Off[DeleteFile::nffil];
Off[Infinity::indet];

(*input*)
gammasum = 0.0;
seed = 1;
accuracy = 0.05; (*0.3,0.05,0.02,0.01*)kmin = -7;
kmax = 7;

(*end input*)

theta = 72;
angles = {72, 72, 72};
starvectors = StarVectors2 [theta, angles, accuracy, False];
gamma = {"random", gammasum};

til = DualizeGrid2 [kmin, kmax, starvectors, gamma, seed];
mv = starvectors [[2]];
uc = GetUnitCell2 [theta, til, starvectors, mv];
numpoints = Length[uc[[1]];
tuc = TrimUnitCell3 [uc, starvectors, mv];
duc = DualizeUnitCell [uc, starvectors, mv];
puc = PlotDualUnitCell [duc];

{basisvector1, basisvector2} = Chop[duc[[3]];
{lengthbasisvector1, lengthbasisvector2} = Norm /@ {basisvector1, basisvector2};
bonds = duc[[4]];
SphereCenter1 = Chop[bonds[[All, 1]];
SphereCenter2 = Chop[bonds[[All, 2]];

fout = StringJoin["./dat/"];
fout = StringJoin[fout, "MP_G_", ToString[gammasum]];
fout = StringJoin[fout, "_sd_", ToString[seed], ""];
fout = StringJoin[fout, "_N_", ToString[numpoints], ""];
fout = StringJoin[fout, "_coords.dat"];
DeleteFile [fout];

Save[fout, {numpoints, basisvector1, basisvector2,
lengthbasisvector1, lengthbasisvector2, SphereCenter1, SphereCenter2}];

```

```
pucAll = Show[puc, Graphics[Arrow /@ {{0, 0}, #} & /@ duc[[3]]],
  Graphics[{{Green, PointSize[0.01], Point /@ tuc[[1]]}}];
```

```
fout = StringReplace[fout, "_coords.dat" → ".png"];
```

```
Export[fout, Show[pucAll], "CompressionLevel" → 0];
```

```
{0.168693, 0.3312, 0.281807, -0.375366, -0.406334}
```

```
76 tiles in unit cell
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```
76 points in trimmed, translated unit cell
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```
DeleteFile : Directory or file ./dat/MP_G_0._sd_1_N_76_coords.dat not found .
```

```
In[170]:= Import[fout]
```

```
Out[170]=
```

