In[31]:=
```
(* Masses in eV, Energies in MeV and distances in km *)
δ = 0
θ12 = ArcTan[Sqrt[.87]] / 2
θ23 = ArcSin[Sqrt[.92]] / 2
θ13 = ArcSin[Sqrt[.15]] / 2
```

Out[31]= 0

Out[32]= 0.375305

Out[33]= 0.64202

Out[34]= 0.19885

In[35]:=
```
c12 = Cos[θ12]; c13 = Cos[θ13]; c23 = Cos[θ23];
s12 = Sin[θ12]; s13 = Sin[θ13]; s23 = Sin[θ23];
```

In[37]:=
```
Δm21 = 7.59 * 10^-5;
Δm31 = 2.43 * 10^-3;
Δm32 = 2.43 * 10^-3;
```

In[40]:=
```
c12 = Cos[θ12]; c13 = Cos[θ13]; c23 = Cos[θ23];
s12 = Sin[θ12]; s13 = Sin[θ13]; s23 = Sin[θ23];
```

In[42]:=
```
U = {{c12 c13, s12 c13, s13 Exp[-I δ]},
     {-s12 c23 - c12 s23 s13 Exp[-I δ], c12 c23 - s12 s23 s13 Exp[-I δ], s23 c13},
     {s12 s23 - c12 c23 s13 Exp[-I δ], -c12 s23 - s12 c23 s13 Exp[-I δ], c23 c13}};
U // N // MatrixForm
```

Out[43]//MatrixForm=

$$\begin{pmatrix} 0.912062 & 0.359333 & 0.197542 \\ -0.403628 & 0.701782 & 0.587014 \\ 0.0723026 & -0.615127 & 0.785106 \end{pmatrix}$$

In[44]:=
```
ConjugateTranspose[U].U // N // MatrixForm
```

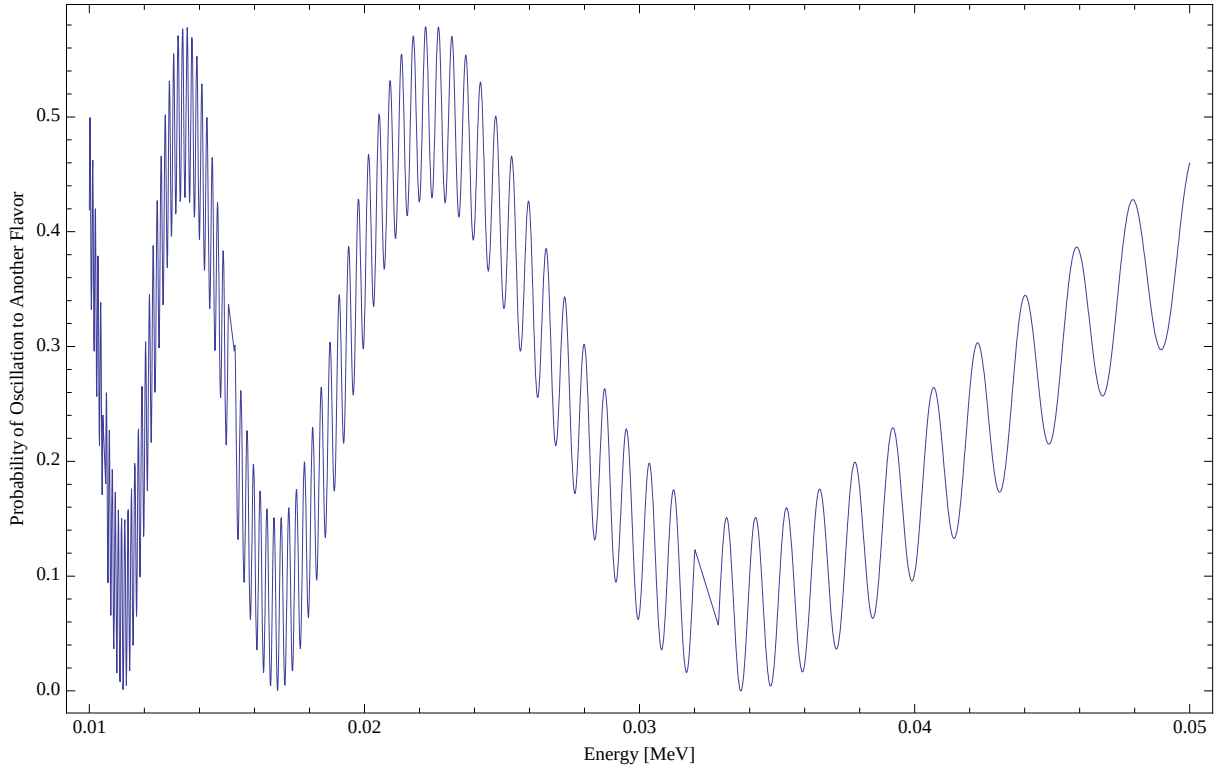
Out[44]//MatrixForm=

$$\begin{pmatrix} 1. & 4.16334 \times 10^{-17} & -2.77556 \times 10^{-17} \\ 4.16334 \times 10^{-17} & 1. & 0. \\ -2.77556 \times 10^{-17} & 0. & 1. \end{pmatrix}$$

In[45]:=
```
P[L_, E0_] := -4 Sum[U[[1, 2]] U[[β, 2]] U[[1, 1]] U[[β, 1]] Sin[5067 Δm21 L / (4 E0)]^2 +
    U[[1, 3]] U[[β, 3]] U[[1, 1]] U[[β, 1]] Sin[5067 Δm31 L / (4 E0)]^2 +
    U[[1, 3]] U[[β, 3]] U[[1, 2]] U[[β, 2]] Sin[5067 Δm32 L / (4 E0)]^2, {β, 2, 3}]
```

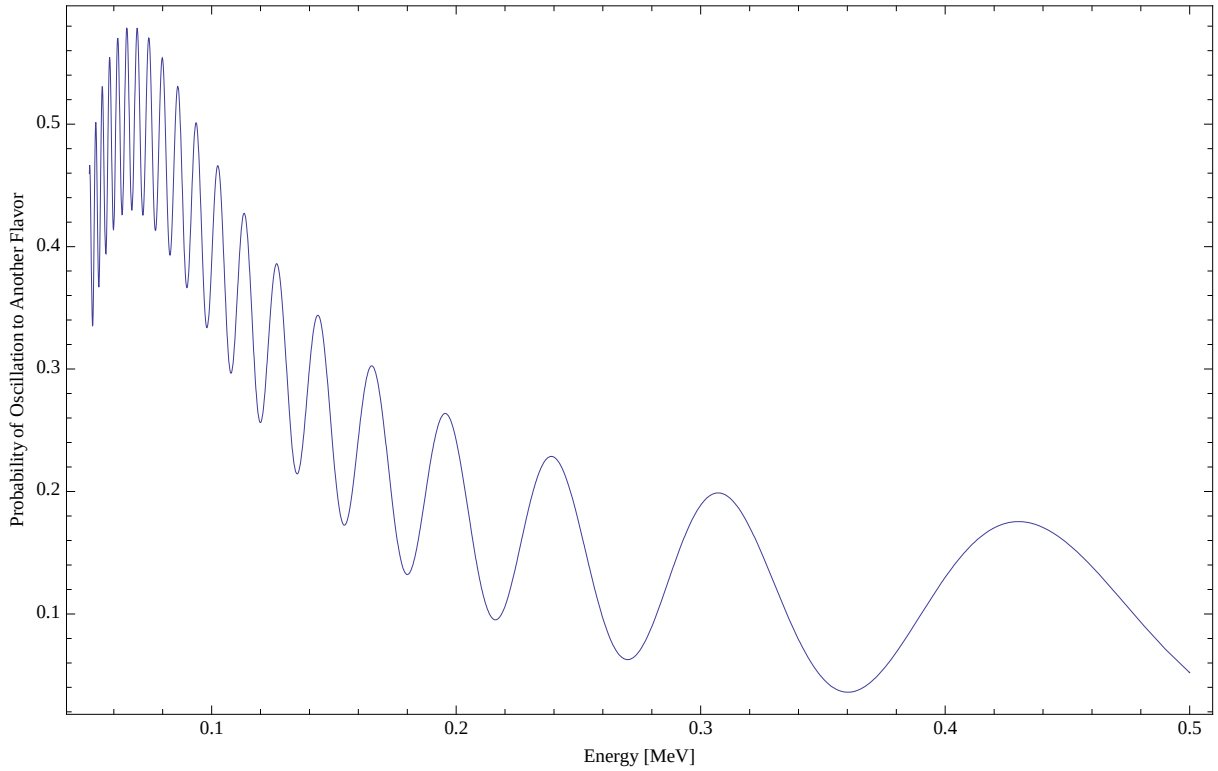
In[46]:=
```
Plot[P[1.1, E0], {E0, .01, .05}, PlotRange → All, Axes → False, Frame → True,
 FrameLabel → {"Energy [MeV]", "Probability of Oscillation to Another Flavor"}]
```

Out[46]=



In[47]:=
```
Plot[P[1.1, E0], {E0, .05, .5}, PlotRange → All, Axes → False, Frame → True,
 FrameLabel → {"Energy [MeV]", "Probability of Oscillation to Another Flavor"}]
```

Out[47]=



In[48]:=
```
Plot[P[1.1, E0], {E0, .5, 10}, PlotRange → All, Axes → False, Frame → True,
 FrameLabel → {"Energy [MeV]", "Probability of Oscillation to Another Flavor"}]
```

Out[48]=