In[ ]:= **n1 = 1 / Sqrt[2];**
⎿ Quadratwur:

In[ ]:= **n2 = n1;**

In[ ]:= **n3 = 0;**
n = {n1, n2, n3};

In[ ]:= **R = {{n1^2 (1 - Cos[α]) + Cos[α],**
⎿ Kosinus ⎿ Kosinus

n1 * n2 (1 - Cos[α]) - n3 * Sin[α], n1 * n3 (1 - Cos[α]) + n2 * Sin[α]},
⎿ Kosinus ⎿ Sinus ⎿ Kosinus ⎿ Sinus

{n2 * n1 (1 - Cos[α]) + n3 * Sin[α], n2^2 (1 - Cos[α]) + Cos[α],
⎿ Kosinus ⎿ Sinus ⎿ Kosinus ⎿ Kosinus

n2 * n3 (1 - Cos[α]) - n1 * Sin[α]}, {n3 * n1 (1 - Cos[α]) - n2 * Sin[α],
⎿ Kosinus ⎿ Sinus ⎿ Kosinus ⎿ Sinus

n3 * n2 (1 - Cos[α]) + n1 * Sin[α], n3^2 (1 - Cos[α]) + Cos[α]}};
⎿ Kosinus ⎿ Sinus ⎿ Kosinus ⎿ Kosinus

In[ ]:= **d = R.(s * {1, 0, 0} + t * {0, 1, 0}) + m {mx, my, 0};**

In[ ]:= **a = {ax, ay, az};**
b = {bx, by, bz};

In[ ]:= **la = d.a;**
lb = -d.b;
l = la + lb;

In[ ]:= **p = 2 * Pi * l / λ;**
⎿ Kreiszahl π

pa = 2 * Pi * la / λ;
⎿ Kreiszahl π

pb = 2 * Pi * lb / λ;
⎿ Kreiszahl π

In[ ]:= **F1 = A * Exp[I * p]**
⎿ E··· ⎿ imaginä

Out[ ]= A

$\mathbb{e}^{\frac{2\, i\, \pi \left(ax \left(m\,mx+\frac{1}{2}\,t\,(1-Cos[\alpha])+s\left(\frac{1}{2}\,(1-Cos[\alpha])+Cos[\alpha]\right)\right)-bx\left(m\,mx+\frac{1}{2}\,t\,(1-Cos[\alpha])+s\left(\frac{1}{2}\,(1-Cos[\alpha])+Cos[\alpha]\right)\right)+ay\left(m\,my+\frac{1}{2}\,s\,(1-Cos[\alpha])+t\left(\frac{1}{2}\,(1-Cos[\alpha])+Cos[\alpha]\right)\right)-by\left(m\,my+\frac{1}{2}\,s\,(1-Cos}{\lambda}}$

In[ ]:= **F2 = Integrate[F1, {s, 0, S}, {t, 0, T}]**
⎿ integriere

Out[ ]= $\left(A\left(\mathbb{e}^{\frac{2\,i\,m\,(ax\,mx-bx\,mx+ay\,my-by\,my)\,\pi}{\lambda}} - \mathbb{e}^{\frac{i\,\pi\left(2\,ax\,m\,mx-2\,bx\,m\,mx+2\,ay\,m\,my-2\,by\,m\,my+ax\,S+ay\,S-bx\,S-by\,S+(ax-ay-bx+by)\,S\,Cos[\alpha]-\sqrt{2}\,(az-bz)\,S\,Sin[\alpha]\right)}{\lambda}} + \right.\right.$

$\mathbb{e}^{\frac{i\,\pi\left(2\,ax\,m\,mx-2\,bx\,m\,mx+2\,ay\,m\,my-2\,by\,m\,my+ax\,S+ay\,S-bx\,S-by\,S+ax\,T+ay\,T-bx\,T-by\,T+(ax-ay-bx+by)\,(S-T)\,Cos[\alpha]-\sqrt{2}\,(az-bz)\,(S-T)\,Sin[\alpha]\right)}{\lambda}} -$

$\left.\left.\mathbb{e}^{\frac{i\,\pi\left(2\,ax\,m\,mx-2\,bx\,m\,mx+2\,ay\,m\,my-2\,by\,m\,my+ax\,T+ay\,T-bx\,T-by\,T-(ax-ay-bx+by)\,T\,Cos[\alpha]+\sqrt{2}\,(az-bz)\,T\,Sin[\alpha]\right)}{\lambda}}\right)\lambda^2\right)\Big/$

$\left(\pi^2\left(ax + ay - bx - by + (ax - ay - bx + by)\,Cos[\alpha] - \sqrt{2}\,(az - bz)\,Sin[\alpha]\right)\right.$

$\left.\left(-ax - ay + bx + by + (ax - ay - bx + by)\,Cos[\alpha] - \sqrt{2}\,(az - bz)\,Sin[\alpha]\right)\right)$

In[ ]:= **A = 1;**
mx = 0;
my = 0;
S = m;
T = m;
F2

Out[ ]= $\left(\left(1 + e^{\frac{i\,(2\,ax\,m+2\,ay\,m-2\,bx\,m-2\,by\,m)\,\pi}{\lambda}} - e^{\frac{i\,\pi\,\left(ax\,m+ay\,m-bx\,m-by\,m+\left(ax-ay-bx+by\right)\,m\,Cos[\alpha]-\sqrt{2}\,\left(az-bz\right)\,m\,Sin[\alpha]\right)}{\lambda}} - \right.\right.$

$\left. e^{\frac{i\,\pi\,\left(ax\,m+ay\,m-bx\,m-by\,m-\left(ax-ay-bx+by\right)\,m\,Cos[\alpha]+\sqrt{2}\,\left(az-bz\right)\,m\,Sin[\alpha]\right)}{\lambda}}\right)\lambda^2\Bigg) \Bigg/$

$\left(\pi^2\left(ax + ay - bx - by + \left(ax - ay - bx + by\right)Cos[\alpha] - \sqrt{2}\,\left(az - bz\right)Sin[\alpha]\right)\right.$
$\left.\left(-ax - ay + bx + by + \left(ax - ay - bx + by\right)Cos[\alpha] - \sqrt{2}\,\left(az - bz\right)Sin[\alpha]\right)\right)$

In[ ]:=