In[1]:=
```
Feta = μ * Exp[I * g] / (η - Exp[I * g]) + μ * Exp[-I * g] / (η - Exp[-I * g]) +
  2 * u * l / Pi * Log[η]
```

Out[1]=
$$\frac{e^{-i\,g}\,\mu}{-e^{-i\,g}+\eta}+\frac{e^{i\,g}\,\mu}{-e^{i\,g}+\eta}+\frac{2\,l\,u\,\text{Log}[\eta]}{\pi}$$

In[2]:=
```
defEta = Exp[(z + I * l) * Pi / (2 * l)]
```

Out[2]=
$$e^{\frac{\pi\,(i\,l+z)}{2\,l}}$$

In[3]:=
```
Weta = D[Feta, η] /. {η → defEta}
```

Out[3]=
$$\frac{2\,e^{-\frac{\pi\,(i\,l+z)}{2\,l}}\,l\,u}{\pi}-\frac{e^{-i\,g}\,\mu}{\left(-e^{-i\,g}+e^{\frac{\pi\,(i\,l+z)}{2\,l}}\right)^2}-\frac{e^{i\,g}\,\mu}{\left(-e^{i\,g}+e^{\frac{\pi\,(i\,l+z)}{2\,l}}\right)^2}$$

In[4]:=
```
dηdz = D[defEta, z]
```

Out[4]=
$$\frac{e^{\frac{\pi\,(i\,l+z)}{2\,l}}\,\pi}{2\,l}$$

In[5]:=
```
gam = (d + l) * Pi / (2 * l)
```

Out[5]=
$$\frac{(d+l)\,\pi}{2\,l}$$

In[6]:=
```
inBla = Weta^2 * dηdz^2 /. {g → gam}
```

Out[6]=
$$\frac{e^{\frac{\pi\,(i\,l+z)}{l}}\,\pi^2\left(\frac{2\,e^{-\frac{\pi\,(i\,l+z)}{2\,l}}\,l\,u}{\pi}-\frac{e^{-\frac{i\,(d+l)\,\pi}{2\,l}}\,\mu}{\left(-e^{-\frac{i\,(d+l)\,\pi}{2\,l}}+e^{\frac{\pi\,(i\,l+z)}{2\,l}}\right)^2}-\frac{e^{\frac{i\,(d+l)\,\pi}{2\,l}}\,\mu}{\left(-e^{\frac{i\,(d+l)\,\pi}{2\,l}}+e^{\frac{\pi\,(i\,l+z)}{2\,l}}\right)^2}\right)^2}{4\,l^2}$$

In[7]:=
```
res = Residue[inBla, {z, I * d}]
```

Out[7]=
$$-\frac{e^{\frac{i\,(d+l)\,\pi}{l}}\left(1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)\pi\,\mu^2}{\left(-1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)^3\,l}$$

In[8]:=
```
FxiFy = I / 2 * ρ * 2 * Pi * I * res
```

Out[8]=
$$\frac{e^{\frac{i\,(d+l)\,\pi}{l}}\left(1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)\pi^2\,\mu^2\,\rho}{\left(-1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)^3\,l}$$

In[9]:=
```
InterferenceCoeff = FxiFy / (1 / 2 * ρ * u^2 * Sqrt[μ / u])
```

Out[9]=
$$\frac{2\,e^{\frac{i\,(d+l)\,\pi}{l}}\left(1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)\pi^2\,\mu^2}{\left(-1+e^{\frac{i\,(d+l)\,\pi}{l}}\right)^3\,l\,u^2\,\sqrt{\frac{\mu}{u}}}$$