leiter magnetfeld

Unknown Author

November 30, 2014

In [1]:
```
from sympy import *
init_session()
init_printing()
u,r,I,Gs=symbols('u r I Gs')
from sympy.physics.units import *
```

```
IPython console for SymPy 0.7.4.1 (Python 2.7.6-64-bit) (ground types:
python)

These commands were executed:
>>> from __future__ import division
>>> from sympy import *
>>> x, y, z, t = symbols('x y z t')
>>> k, m, n = symbols('k m n', integer=True)
>>> f, g, h = symbols('f g h', cls=Function)

Documentation can be found at http://www.sympy.org
```

In [2]:
```
H = I / (2*pi*r)
H
```

Out [2]:
$$\frac{I}{2\pi r}$$

In [3]:
```
u = 4*pi*1e-7 * N / A**2
u
```

Out [3]:
$$\frac{4.0 \cdot 10^{-7}\pi}{A^2 s^2} kgm$$

In [4]:
```
B = H*u
B
```

Out [4]:
$$\frac{2.0 \cdot 10^{-7} Ikgm}{rA^2 s^2}$$

In [5]:
```
B1 = B.subs(r, 0.001*m).subs(I, 0.01*A)
B1
```

Out [5]:
$$\frac{2.0 \cdot 10^{-6} kg}{As^2}$$

In [6]:
```
B2 = B1.subs(T, 10000 * Gs)
B2
```

Out [6]:
$$0.02Gs$$