

```
def General_Lorentz_Tranformation():
    Print_Function()
    (alpha,beta,gamma) = symbols('alpha beta gamma')
    (x,y,z,t) = symbols("x y z t",real=True)
    (st4d,g0,g1,g2,g3) = Ga.build('gamma*t|x|y|z',g=[1,-1,-1,-1])
    B = (x*g1+y*g2+z*g3)^(t*g0)
    print B
    print B.exp(hint='+')
    print B.exp(hint='-')
```

Code Output:

$$-tx\gamma_t\wedge\gamma_x-ty\gamma_t\wedge\gamma_y-tz\gamma_t\wedge\gamma_z$$

$$\cosh\left(\sqrt{x^2+y^2+z^2}|t|\right)-\frac{tx\sinh\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_x-\frac{ty\sinh\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_y-\frac{tz\sinh\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_z$$

$$\cos\left(\sqrt{x^2+y^2+z^2}|t|\right)-\frac{tx\sin\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_x-\frac{ty\sin\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_y-\frac{tz\sin\left(\sqrt{x^2+y^2+z^2}|t|\right)}{\sqrt{x^2+y^2+z^2}|t|}\gamma_t\wedge\gamma_z$$