# SOME BASIC GEOMETRICAL CONDITIONS

The HE and IE equations are:

$$d\wedge F^a = \mu_0 j^a = -\frac{A^{(0)}}{\mu_0}\left(q^b \wedge R^a{}_b + \omega^a{}_b \wedge T^b\right) \quad -(1)$$

$$d\wedge \tilde{F}^a = \mu_0 J^a = -\frac{A^{(0)}}{\mu_0}\left(q^b \wedge \tilde{R}^a{}_b + \omega^a{}_b \wedge \tilde{T}^b\right) \quad -(2)$$

1) When gravitation and electromagnetism interact:

$$J^a \gg j^a \sim 0 \quad -(3)$$

and $J^a$ and $j^a$ are non-zero in general.

2) For gravitation free of electromagnetism:

$$\left(q^b \wedge R^a{}_b\right)_{grav} = 0 \quad -(4)$$

3) For electromagnetism free of gravitation:

$$\left(q^b \wedge R^a{}_b + \omega^a{}_b \wedge T^b\right)_{e/m} = 0. \quad -(5)$$

) Under all conditions in general:

$$q^b \wedge \tilde{R}^a{}_b \neq 0 \quad -(6)$$

$$\omega^a{}_b \wedge \tilde{T}^b \neq 0. \quad -(7)$$

otes Eqn (4) is dictated by the Newton Laws in the weak field limit and more generally by Einstein laws. (5) is dictated by the Gauss Law of magnetism & the Faraday law of induction.