$$N_m = L(E)\ N\ \sigma_{\gamma,max} \quad , \tag{2}$$

where for incoherent production (in the field of protons) $N = 2.7 \times 10^{23}$ is the number of protons (free or bound) per cm^3 of oil, and for coherent production (in the field of nuclei) $N = 3.4 \times 10^{22}$ equals the number of carbon atoms per cm^3. The energy E is related to the monopole mass m by the equation

$$E = 2mc^2(1 + m/m_T) \quad , \tag{3}$$

where m_T is the mass of the target nucleus, or nucleon. For $mc^2 = 2.4$ Bev, for example, E = 17 Bev for incoherent, and E = 5.8 Bev for coherent production. For these energies, ~~xxxxxxxxxxxxx~~ Fig. 3 gives $L = 6 \times 10^{10}$ cm and $L = 8 \times 10^{13}$ cm, respectively. Again setting $N_m = 2$, one obtains from Eq. (2) $\sigma_{\gamma,max} = 1.3 \times 10^{-34}$ cm^2 per proton for the incoherent and $\sigma_{\gamma,max} = 7 \times 10^{-37}$ cm^2 per nucleus for the coherent process. Because L rises steeply with decreasing E, $\sigma_{\gamma,max}$ falls strongly as m decreases.

10. Sensitivity to Monopoles of "Unit" Charge

In the foregoing discussion of the expected behavior of monopoles in this experiment, we have assumed a monopole charge g = (137/2)e. One has no theoretical grounds for excluding the possibility of a charge which is an integral multiple of (137/2)e. Indeed, some speculative arguments can be advanced favoring what we shall call the "unit" charge, 137 e. Examining the experimental conditions with this possibility in mind, we find a weak point at the step where monopoles made in the primary target