with $0 \leq \alpha, \beta \leq 1$. The standard GIM model has $\alpha = \beta = 0$.

In the super-naive parton model under consideration one obtains for the ratio of neutral to charged current cross sections in deep inelastic scattering off an isoscalar target

$$R^{\nu} = \frac{X}{3}\left[\left(\frac{1+\alpha}{2} - \frac{4}{3}\sin^2\theta_W\right)^2 + \left(\frac{1-\alpha}{2}\right)^2 + \left(\frac{1-\alpha}{2}\right)\left(\frac{1+\alpha}{2} - \frac{4}{3}\sin^2\theta_W\right)\right.$$

$$\left. + \left(\frac{1+\beta}{2} - \frac{2}{3}\sin^2\theta_W\right)^2 + \left(\frac{1-\beta}{2}\right)^2 + \left(\frac{1-\beta}{2}\right)\left(\frac{1+\beta}{2} - \frac{2}{3}\sin^2\theta_W\right)\right]$$

$$R^{\bar{\nu}} = X\left[\left(\frac{1+\alpha}{2} - \frac{4}{3}\sin^2\theta_W\right)^2 + \left(\frac{1-\alpha}{2}\right)^2 - \left(\frac{1-\alpha}{2}\right)\left(\frac{1+\alpha}{2} - \frac{4}{3}\sin^2\theta_W\right)\right.$$

$$\left. + \left(\frac{1+\beta}{2} - \frac{2}{3}\sin^2\theta_W\right)^2 + \left(\frac{1-\beta}{2}\right)^2 - \left(\frac{1-\beta}{2}\right)\left(\frac{1+\beta}{2} - \frac{2}{3}\sin^2\theta_W\right)\right]$$

where X is a parameter depending on the neutral vector boson mass; in the simplest Weinberg-Salam theory $X = 1$. These numbers have been plotted in Fis. 2 as a function of $\sin^2\theta_W$ for the extreme cases $\alpha, \beta = 0, 1$. As experimental results on the neutral current become more precise, we can expect that α and β will be severely constrained.

Further tests of the structure of the neutral current, for reactions other than deep inelastic and without using the parton model so naively could be carried out following Ref. 28.

e) Wrong-sign dimuons and trimuons:

As was alluded to above, D^0-$\bar{D}^0$ mixing provides a possible mechanism[29] which would account for the observation of $\mu^-\mu^-$ events recently reported in[14]