$(Y_{1-x}Pr_x)Ba_2Cu_3O_{7-\delta}$ and $Y(Ba_{2-x}La_x)Cu_3O_7$ (Table III in ref. [25]), and we will approximate them by a linear dependence (see Fig.9):

$$\alpha = 0.623 - 0.00637\, T_c\,(\mathrm{K})\ ,\ 38.3\mathrm{K} \le T_c \le 92.3\mathrm{K} \qquad (36)$$

Fig. 9. Experimental data on the dependence of α on T_c for $Y(Ba_{2-x}La_x)Cu_3O_7$ [22] (triangles) and $(Y_{1-x}Pr_x)Ba_2Cu_3O_7$[19],[20] (circles). The points were taken from table III of the review article by J.P.Franck [25]. The dashed straight line is the least square fit (eq. (36)).

This we can use to define the dependence of x on T_c with the help of the equation for $\alpha(x)$. Substituting x in eq. (33) we can obtain the connection between μ_1 and T_c. This will be the prediction for future experiments, since the photoemission experiments permit to measure μ_1 for compounds with reduced T_c, provided that single crystalline samples will be available.

For convenience we rewrite eq. (33) in the form

$$\ln T_c + f(x) = \ln\frac{8\gamma\mu_1}{\pi} - b\mu_1^{1/2}\ , \qquad (37)$$

where

$$b = \frac{1}{\lambda\,\mu_1^{1/2}} \qquad (38)$$

is the unknown constant (independent on μ_1). The program was to define $\mu_1(T_c)$ for different values of the constant b and to leave the choice to experiment. It happened, however, that the right hand side as function of μ_1 and the left hand side as function of T_c are nonmonotonous and have maxima. The only possibility to obtain a continuos dependence $\mu_1(T_c)$ is to chose the constant b in such a way that the two maxima have equal values (otherwise we get either a discontinuity or no solution at all). This value is

$$b = 0.137\ , \qquad (39)$$

and the corresponding dependence $\mu_1(T_c)$ is plotted at Fig.10.