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ԵՐԵՎԱՆԻ ՖԻԶԻԿԱՅԻ ԻՆՍՏԻՏՈՒՏ
ЕРЕВАНСКИЙ ФИЗИЧЕСКИЙ ИНСТИТУТ
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ESTIMATION OF PARAMETERS OF K-MESON STRUCTURE FUNCTIONS

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K -ՄԵԶՈՆԻ ԿԱՌՈՒՑՎԱԾՔԱՅԻՆ ՖՈՒՆԿՑԻԱՆԵՐԻ ԲՆՈՒԹԱԳՐԵՐԻ ԳՆԱՀԱՏՈՒՄԸ

Բազմապրոտոնային վերամիավորման մոդելի շրջանակներում, օգտագործելով Կուտի-Վայսկոպֆի բնութագրական տեսքը, վերլուծվել են $K^{\pm}p \to MX$ /$M = \rho$, φ , K/890/, K/1430// փոխազդեցություններում կաոնի հատվածավորման տիրույթում վեկտորական և տենզորական մեզոնների առաջացման ինկլյուզիվ հրանգանիների վերաբերյալ գոյություն ունեցող փորձարարական տվյալները բարձր էներգիաների /32-110 ԳէՎ/c / դեպքում՝ նպատակ ունենալով ստանալ K -մեզոնի կառուցվածքային ֆունկցիաների բնութագրերը։ Ցույց է տրված, որ կաոնի /անտի/քվարկային ծովում տարօրինակ /անտի/քվարկների բաժինը կազմում է ոչ տարօրինակ /անտի/քվարկների մոտ 1/6 մասը /$\lambda_s = 0,18 \pm 0,01$/։ Կաոնի վալենտային քվարկները կրում են նրա իմպուլսի մոտ 47% /ոչ տարօրինակ վալենտային քվարկը՝ 17% և տարօրինակ վալենտային քվարկը՝ 30% /, իսկ ծովի պարտոնները՝ 53% /ոչ տարօրինակ քվարկ-անտիքվարկային զույգերը՝ 23 ± 6%, տարօրինակ քվարկ-անտիքվարկային զույգերը՝ 2 ± 1%, գլյուոնները՝ 28 ± 9%/։

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ESTIMATION OF PARAMETERS OF K-MESON STRUCTURE FUNCTIONS

On the basis of multiparton recombination model with the use of the Kuti-Weisskopf parametrization there have been analyzed the available experimental data on inclusive spectra of the vector and tensor mesons in the reactions $K^{\pm}p \rightarrow MX$ ($M = \rho, \varphi$, K (890), K(1430)) in the kaon fragmentation region at high energies (32-110 GeV/c) with the aim to extract the parameters of the K-meson structure functions. For the suppression factor of the kaon strange sea the value $\lambda_s = 0.18\pm0.01$ is obtained. The kaon longitudinal momentum fractions carried away by nonstrange and strange valence quarks and sea partons respectively are $\langle X_N^v \rangle = 0.17$, $\langle X_S^v \rangle = 0.30$ and $\langle X^S \rangle = 0.53$. Estimates are obtained for the summary longitudinal momentum fractions carried away by nonstrange sea quark-antiquark pairs $\langle X_N^S \rangle = 0.23\pm0.06$, strange sea quark-antiquark pairs $\langle X_S^S \rangle = 0.02\pm0.01$ and gluons $\langle X_G \rangle = 0.28\pm0.09$.

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ОЦЕНКА ПАРАМЕТРОВ СТРУКТУРНЫХ ФУНКЦИЙ K – МЕЗОНА

На основе многопартонной рекомбинационной модели с использованием параметризации Кути-Вайскопфа проанализированы имеющиеся экспериментальные данные по инклюзивным спектрам векторных и тензорных мезонов в реакциях $K^{\pm}p \to MX$ ($M = \rho$, φ, $K(890)$, $K(1430)$) в области фрагментации каона при высоких энергиях (32-110 ГэВ/с) с целью извлечения параметров структурных функций K - мезона. Для фактора подавленности странного моря каона получено значение $\lambda_s = 0,18 \pm 0,01$. Доли продольного импульса каона, уносимые, соответственно, нестранным и странным валентными кварками и морскими партонами, равны $\langle X_N^v \rangle = 0,17$, $\langle X_s^v \rangle = 0,30$ и $\langle X^s \rangle = 0,53$. Получены оценки для долей суммарного продольного импульса, уносимых нестранными морскими кварк-антикварковыми парами $\langle X_N^s \rangle = 0,23 \pm 0,04$, странными морскими кварк-антикварковыми парами $\langle X_s^s \rangle = 0,02 \pm 0,01$ глюонами $\langle X_G \rangle = 0,28 + 0,08$.

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At present, we have rather scanty information on structure functions of kaons. The only source to obtain direct experimental information on structure functions of unstable hadrons (pions, kaons) are the processes of the massive lepton pair production in the interaction of these hadrons with matter [1,2] . There are extremely few experiments performed with the K--meson beams; there is measured only [3] the ratio of structure functions of nonstrange valence quarks in kaon and pion (in this case the measurement errors in the region of large values of the Bjorken variable X amount to 20-40 %). As to the strange valence quark as well as the sea (anti)quarks of kaon, here the experiments on the lepton pair production are low-sensitive to their structure functions. For this reason, attempts are made as to derive with the help of the model considerations the information about the kaon structure functions from other experiments.

In Refs. [4,5] , there are extracted parameters of valence quarks (strange and nonstrange) distributions in the kaon by means of the fusion model description of experimental data on fragmentation of kaons into vector mesons (at initial momenta 32 and 43 GeV/c) and using the Kuti-Weisskopf parametrization [6] for structure functions. In Refs. [7,8] , an analysis is carried out within the developed in [9-11] recombination model of experimental data on inclusive spectra of secondary K- and π -mesons in the beam fragmentation region in Kp-interactions, and estimates for the parameters of structure functions of the kaon valence and sea quarks are obtained. Note, however, that rather essential contribution to inclusive spectra of secondary π - and K-mesons from the vector mesons decays is not taken into account in that analysis.

Refs. [12,13] proposed a multiparton recombination model (MRM) of hadron production with low transverse momenta, in which, unlike the earlier developed recombination models [9-11] , a more general case is considered, when arbitrary number of the initial hadron partons may contribute to the secondary hadron longitudinal momentum. Within the MRM, Refs. [14,15] describe inclusive spectra of proton, pion and kaon fragmentation (with momenta above 30 GeV/c) into baryon and meson resonances.

In the present work, within the MRM, we are carrying out a detailed analysis of the available experimental data [16-23] on inclusive spectra (by the Feynman variable X) of the vector, ρ , φ , K (890), and tensor, K (1430) mesons in the incident kaon fragmentation region ($X \geqslant 0.1$) in the reactions $K^{\pm}p$ at high energies (32-110 GeV) with the aim to extract data on structure functions of kaon, and, in particular, to determine the suppression factor for the K-meson strange sea.

In this work, to describe the kaon multiparton distribution function, we have used the Kuti-Weisskopf parametrization [6] , whence, in particular, come out the following expressions for the one-particle distribution valence quarks and sea partons:

$$X u(X) = X^{\beta_N} (1-X)^{-1+\gamma+\beta_s} B^{-1}(\beta_N , \gamma + \beta_s), \qquad (1a)$$

$$xS(x) = x^{\beta_S}(1-x)^{-1+\gamma+\beta_N} B^{-1}(\beta_S, \gamma+\beta_N), \tag{1b}$$

$$x a_S(x) = g_a (1-x)^{-1+\gamma+\beta_N+\beta_S}, \tag{1c}$$

where $a = u, \bar{u}, d, \bar{d}, s, \bar{s}$ denotes a type of the sea parton (the contribution of heavy quarks is neglected), $\gamma = \sum_a g_a$, $B(x,y)$ is the Euler beta-function.

In order to obtain within the MRM the inclusive spectra of mesons in the kaon fragmentation region, we must consider the distribution functions of many- (two- and more) particle subsystems in the kaon which recombine into the final meson. The choice of these subsystems depends on the quark composition of the final meson and on the number N_V of valence quarks common with the initial kaon. In this work we consider the processes $K \to M$, where the quantum numbers of meson M do not permit the diffraction dissociation of kaon to the given meson. Earlier, there were obtained indications [12,13] that in the processes of the non-diffraction type N_V is always less than the number of the valent quarks of initial hadron; in particular, in the case of non-diffraction kaon fragmentation N_V = 1 or 0.

Consider, first, the processes $K \to M$ with N_V = 1. Within the MRM it is assumed that in this case, from the kaon to the final meson there may transform, along with the valence quark (antiquark) and the corresponding sea antiquark (quark), also an arbitrary number of sea partons (gluons and quark-antiquark pairs).

Following that, we extract in the kaon a multiparton substate which contains one valent quark, one sea antiquark of the given type (acting as a valence quark in the final hadron), and an arbitrary number of sea partons belonging to the given substate with a probability W . This substate, possessing a summary longitudinal momentum X , is characterized by its statistical weight $F_{V_1 V_2}^{N_V=1}(X_1, X_2; W)$, where $X_1 + X_2 = X$; X_2 is a longitudinal momentum of antiquark of the given type, X_1 is a summary momentum of valence quark and sea partons belonging to the given substate. Expressions for $F_{V_1 V_2}^{N_V=1}(X_1, X_2; W)$ for the meson-to-meson fragmentation processes are given in [15] .

To the inclusive spectrum of final meson there may contribute also the processes without participation of valence quarks of initial kaon ($N_V = 0$). In this case, a fixed number (two) of partons - the sea quark and antiquark of the relevant flavor go over into the final meson from the initial kaon. Expressions for the two-parton distribution function $F_{V_1 V_2}^{N_V=0}(X_1, X_2)$ are also given in [15] .

In the MRM a hypothesis is used that the recombination of the considered multiparton (two-parton) substate is preceded by the formation of constituent objects - valons V_1 ; V_2 , having longitudinal momenta X_1 and X_2 . Such hypothesis enables one to introduce the valons-to-meson recombination function $R_M(X_1/X, X_2/X)$ which may be connected [11] with the meson two-valon distribution function $G_M(z_1, z_2)$:

$$R_M(z_1, z_2) = A_M \, z_1 z_2 \, G_M(z_1, z_2), \qquad (2)$$

where A_M are the independent of kinematical variables coefficients which are assumed the same for the mesons belonging to the same multiplet but may be different for different multiplets. Expressions for $G_M(z_1, z_2)$ for the mesons with various quark compositions are given in [15] (see also the Appendix).

In the MRM the invariant inclusive spectrum $f(x) = (1/\sigma_{in}) \int E/P_{max} (d^3\sigma / dx\, d^2 P_\perp) \ldots$

of the direct meson production in the kaon fragmentation region in the Kp--interactions at high energies has the form [15] :

$$f(x) = \int [F^{N_v=1}_{V_1V_2}(x_1, x_2; W) + F^{N_v=0}_{V_1V_2}(x_1, x_2) \times \times R_M\left(\frac{x_1}{x}, \frac{x_2}{x}\right) \delta\left(1 - \frac{x_1}{x} - \frac{x_2}{x}\right) dx_1 dx_2 . \tag{3}$$

For the inclusive spectra of the "direct" fragmentation of kaon to the vector mesons ρ , φ , K (890) from (3) there come out the following expressions:

$$f_{K^\pm\to\rho^0}(x) = \frac{g_N}{2} f_N^\rho(x) + g_N^2 f_{sea}(x) , \tag{4a}$$

$$f_{K^\pm\to\varphi}(x) = g_s f_s^\varphi(x) + g_s^2 f_{sea}(x), \tag{4b}$$

$$f_{K^\pm\to K^\pm(890)}(x) = g_N f_s^K(x) + g_s f_N^K(x) + g_N g_s f_{sea}(x), \tag{4c}$$

$$f_{K^\pm\to K^0(\bar{K}^0)(890)}(x) = g_N f_s^K(x) + g_N g_s f_{sea}(x) , \tag{4d}$$

where g_N and g_s are the parameters of structure functions (1c) of respectively nonstrange and strange sea (anti)quarks in the kaon. The analytical form of the functions entering the r.h.s. of expressions (4) is given in the Appendix. The functions $f_N^\rho(x)$ and $f_N^K(x)$ coincide to the accuracy of the x -independent factor which differs from unity no more than by a few percent ; hence $f_N^\rho(x) \approx f_N^K(x) \equiv f_N(x)$. The same is true for $f_s^\varphi(x) \approx f_s^K(x) \equiv f_s(x)$ (see the Appendix). The functions $f_N(x)$ and

$f_S(X)$ describe the processes respectively with nonstrange and strange valence quark of the kaon; they depend on the parameters β_N , β_S , γ of structure functions (1) as well as on the above-mentioned parameter W (rather on two parameters W_N and W_S which in the general case may be different for the processes with the participation of strange and nonstrange valence quark of the kaon). The function $f_{sea}(X)$ describes the processes with the participation of only sea quarks of the kaon and depends on the sum $\beta_N + \beta_S + \gamma$ only. All these functions have a common unknown factor $A_V \cong A_M$ figuring in the recombination function (2).

It should be noted that at large $X \geqslant 0.3$, when the contribution of the function $f_{sea}(X)$ is insignificant, between the inclusive spectra (4) there take place certain relations depending only on $\lambda_S = g_S/g_N$ - the suppression factor of the kaon strange sea, in particular:

$$f_{K\to\varphi}(X) \simeq \lambda_S f_{K\to K^0(890)}(X)$$

$$f_{K^+\to K^+(890)}(X) \simeq f_{K^+\to K^0(890)}(X) + 2\lambda_S f_{K\to\rho^0}(X)$$

and so on.

Therefore, when comparing the expressions (4) with experimental data, the parameter λ_S is determined most correctly, its value depends weakly on the choice of other parameters entering the (4). When comparing the (4) with experimental data, the parameters β_N and β_S characterizing the behavior of structure functions of valence quarks in mesons at $X \sim 0$ were not fitted. Their values were fixed proceeding from the fact that the behavior of the valence structure function at $X \sim 0$ is given by the intercept $\alpha(0)$ of the leading Regge trajectory connected with a quark of the given type [4-6]:

$$\beta_N = 1 - \alpha_\rho(0) = 0.5,$$

$$\beta_s = 1 - \alpha_\varphi(0) = 0.9$$

at the values $\alpha_\rho(0) = 0.5$ and $\alpha_\varphi(0) = 0.1$ [24].

The fitting embraced also experimental data on inclusive spectra of tensor mesons $K(1430)$, the expressions for which have the form:

$$f^{(x)}_{K^\pm \to K^0(1430)(\bar{K}^0(1430))} = \frac{A_T}{A_V} f^{(x)}_{K^\pm \to K^0(890)(\bar{K}^0(890))}, \tag{5a}$$

$$f^{(x)}_{K^\pm \to K^\pm(1430)} = \frac{A_T}{A_V} f^{(x)}_{K^\pm \to K^\pm(890)} \tag{5b}$$

where the coefficient (A_T/A_V) represents the suppression factor of the production of the tensor mesons as compared to vector ones. Here also the contribution from the decay $K(1430) \to K(890)\,\pi$ was added to the expressions (4c), (4d) for the spectra $K(890)$.

The fitting was performed over 7 parameters: $g_N (= g_u = g_{\bar{u}} = g_d = g_{\bar{d}})$, $\lambda_s (= g_s/g_N)$, $\gamma (= \sum_a g_a)$, W_N, W_S, A_V and (A_T/A_V). The fitting results are listed in the Table.

Table

λ_s	g_N	γ	W_S	W_N	A_T/A_V	A_V	χ^2/NDF
0.184	0.18	1.63	0.24	~ 0	0.42	2.0	1.85
±0.009	±0.02	±0.09	±0.02		±0.03	±0.3	
		(0.2)	(0.07)			(0.5)	

The theoretical curves calculated at the given values of parameters are compared to the experimental data in Figs. 1-4 (χ^2/NDF = 1.85).

For the suppression factor of the strange kaon sea there was obtained the value $\lambda_s = 0.18 \pm 0.01$.

The suppression coefficient for the tensor mesons determined from the fitting proved to be $(A_T/A_V) = 0.42 \pm 0.03$.

The obtained estimate of the parameter $\gamma = \sum_a g_a = 1.63 \pm 0.09$ determining the norm of the quark-gluon sea in the kaon (see (1)) does not contradict the experimental data [3] on the ratio of structure functions of nonstrange valence quark in the kaon and pion, neither the estimates from Ref. [5] . At the mentioned values of β_N , β_s and γ the nonstrange valence quark carries away the fraction $\langle X_N^v \rangle = 0.17$, the strange valence quark - $\langle X_s^v \rangle = 0.30$, and the sea partons - $\langle X^s \rangle = 0.53$ of the kaon longitudinal momentum.

To check up the sensitivity of the parameters λ_s , γ , (A_T/A_V) to the values of the fixed parameters β_N and β_s , the latters were varied within the limits $0.4 \leqslant \beta_N \leqslant 0.6$, $0.8 \leqslant \beta_s \leqslant 1.0$ (see, e.g. [5]). Here the values of λ_s and (A_T/A_V) varied within the above-cited errors; the spread in the parameter γ increased up to ±0.2 , while in the parameter A_V - up to ±0.5 (see the Table, where these spreads are indicated in the brackets). The value of the parameter g_N varies within $g_N = 0.18 \pm 0.02$ .. There come out the following estimates of the mean fraction of the kaon longitudinal momentum carried away by sea partons of different types : for the summary momentum of the nonstrange sea partons $\langle X_N^s \rangle =$ $= 0.23 \pm 0.06$, for the strange sea partons $\langle X_s^s \rangle = 0.02 \pm 0.01$; for the gluons $\langle X_G \rangle = 0.28 \pm 0.09$. These values noticeably differ from the similar values for the proton (and apparently for the pion [25]) from which the sea quarks carry away nearly 10 %, and gluons 50 % of momentum. It should be noted that in the given work we have applied the Kuti-Weisskopf "standard" parametrization [6] for the multiparton distribution function of hadron; the resulting structure functions (1c) of sea quarks decrease too slowly with increasing X, nearly as $(1 - X)^2$. Therefore the above-cited estimates for the average momenta carried away by the sea partons of different types should be considered as preliminary ones awaiting verification. Into the "modified" Kuti-Weisskopf model [10,13,14,26] one may introduce a new unknown parameter ensuring a stronger fall off in the sea with increasing X. Note, however, that to determine this parameter, one needs experimental data more sensitive to structure functions of sea partons, e.g. data on inclusive spectra of reactions, $K^{\pm}p \to \rho^{\mp}$, $K^{\pm}p \to K^{\mp}$ (890), $K^{+}p \to \bar{K}^{o}$ (890), etc., defined by the sea part of expressions (4).

Finally, the fitting results show that $W_N \sim 0$, and W_S varies (with respect to the spread of the fixed parameters β_N and β_S) within the limits $W_S = 0.25 \pm 0.07$. This implies that the nonstrange valent quark of the kaon in interaction practically entirely loses its "coat", while the strange valent quark partly preserves it.

The appearance of new experimental data on fragmentation of the kaon to meson resonances will enable one to obtain more complete and reliable information on structure functions of the kaon.

APPENDIX

Two-valon distribution functions of vector mesons $G_M(z_1, z_2)$ are given by the expressions:

$$G_\rho(z_1, z_2) = z_1^{\eta_N} z_2^{\eta_N} B^{-1}(\eta_N+1, \eta_N+1), \quad \text{(A 1a)}$$

$$G_\varphi(z_1, z_2) = z_1^{\eta_s} z_2^{\eta_s} B^{-1}(\eta_s+1, \eta_s+1); \quad \text{(A 1b)}$$

$$G_{K^*}(z_1, z_2) = z_1^{\eta_N} z_2^{\eta_s} B^{-1}(\eta_N+1, \eta_s+1), \quad \text{(A 1c)}$$

where the parameters η_N and η_s have the following form [15] :
$\eta_N = -1 + \gamma/2 + \beta_N$ $\quad \eta_s = -1 + \gamma/2 + \beta_s$; it should be noted that the inclusive spectra are low-sensitive to the values of these parameters (see below).

The functions entering the (A) are as follows:

$$f_N^\rho(x) = C_N^\rho x^{\beta_N + W_N\gamma} (1-x)^{-1+\beta_s+(1-W_N)\gamma}, \quad \text{(A 2a)}$$

$$f_N^K(x) = (C_N^K / C_N^\rho) f_N^\rho(x), \quad \text{(A 2b)}$$

$$f_s^\varphi(x) = C_s^\varphi x^{\beta_s + W_s\gamma} (1-x)^{-1+\beta_N+(1-W_s)\gamma}, \quad \text{(A 2c)}$$

$$f_s^K(x) = (C_s^K / C_s^\varphi) f_s^\varphi(x), \quad \text{(A 2d)}$$

$$f_{sea}(x) = A_V (1-x)^{-1+\beta_N+\beta_s+\gamma}, \quad \text{(A 2e)}$$

where

$$C_N^{\rho} = A_V \frac{B(\beta_N + W_N\gamma + \eta_N + 1,\ \eta_N + 1)}{B(\beta_N + W_N\gamma,\ \beta_S + (1-W_N)\gamma)\, B(\eta_N+1,\ \eta_N+1)} , \qquad (A\ 3a)$$

$$C_N^{K} = A_V \frac{B(\beta_N + W_N\gamma + \eta_N + 1,\ \eta_S + 1)}{B(\beta_N + W_N\gamma,\ \beta_S + (1-W_N)\gamma)\, B(\eta_N+1,\ \eta_S+1)} , \qquad (A\ 3b)$$

$$C_S^{\varphi} = A_V \frac{B(\beta_S + W_S\gamma + \eta_S + 1,\ \eta_S + 1)}{B(\beta_S + W_S\gamma,\ \beta_N + (1-W_S)\gamma)\, B(\eta_S+1,\ \eta_S+1)} , \qquad (A\ 3c)$$

$$C_S^{K} = A_V \frac{B(\beta_S + W_S\gamma + \eta_S + 1,\ \eta_N + 1)}{B(\beta_S + W_S\gamma,\ \beta_N + (1-W_S)\gamma)\, B(\eta_N+1,\ \eta_S+1)} . \qquad (A\ 3d)$$

At variation of the parameters in the limits $0 \leqslant \eta_N$, $\eta_S \leqslant 3$ the values of C_N^{ρ}, C_N^{K}, C_S^{φ} , C_S^{K} vary no more than by 5 %, and the ratio of (C_N^K / C_N^{ρ}) and (C_S^K / C_S^{φ}) varies even less.

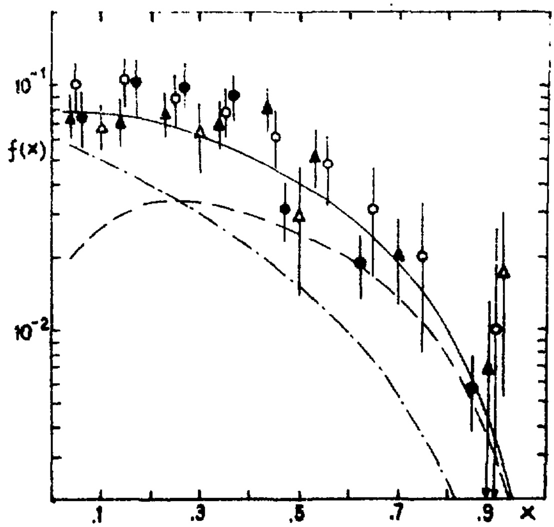

Fig.1

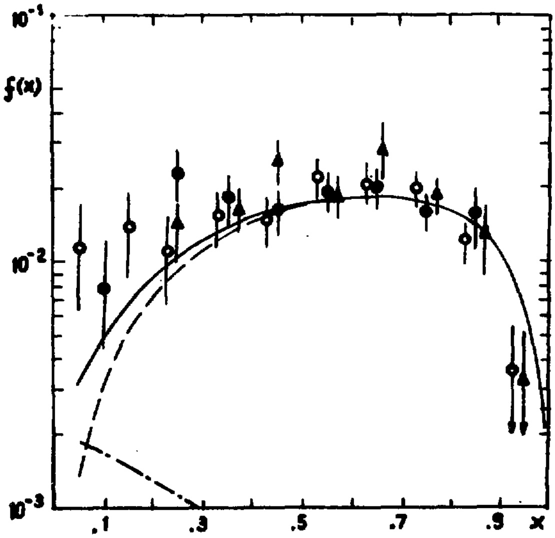

Fig.2

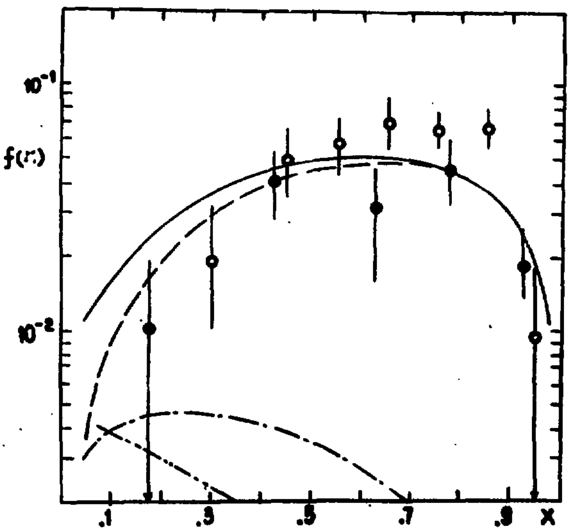

Fig.3a

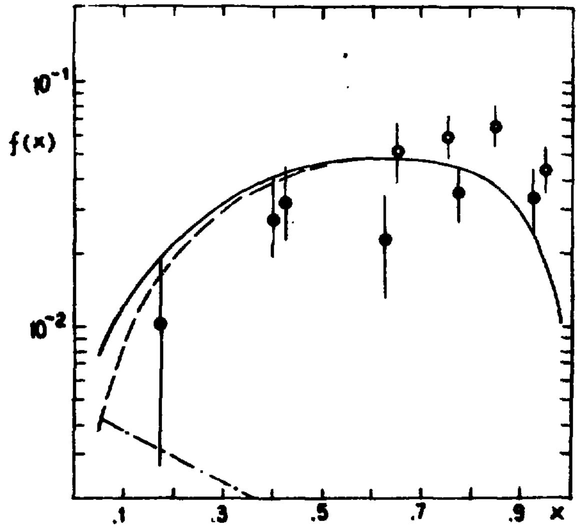

Fig.3b

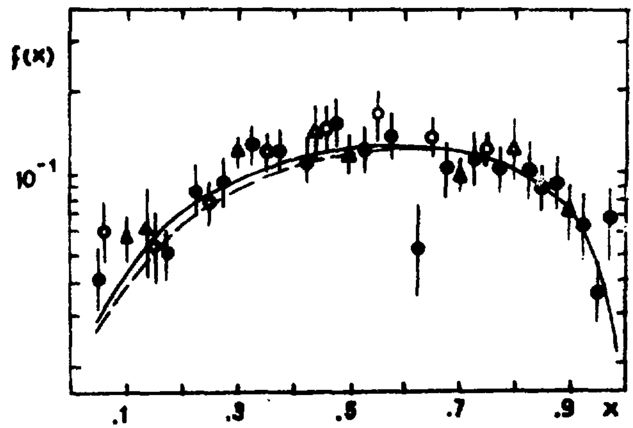

Fig.4a

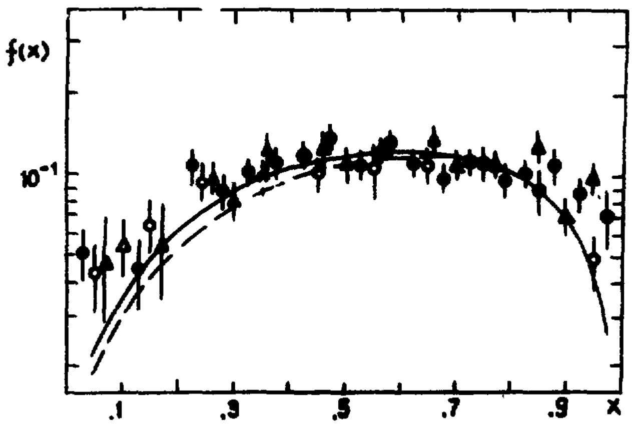

Fig.4b

Figure Captions

Fig. 1. The ρ^{o} -meson inclusive spectrum in the K-meson fragmentation region. $K^{+} \xrightarrow{p} \rho^{o}$: ● - 32 GeV/c [16], ▲ - 70 GeV/c [17]; $K^{-} \xrightarrow{p} \rho^{o}$: ○ - 32 GeV/c [18], Δ - 110 GeV/c [19]. The calculation curves refer to the fragmentation processes for the number of common valence quarks $N_v = 1$ (dashed), $N_v = 0$ (dash-dots). Solid curve - the total spectrum.

Fig. 2. The inclusive spectrum of the φ -meson in the fragmentation region of the K-meson. $K^{+} \xrightarrow{p} \varphi$: ● - 32 GeV/c [16], ▲ - 70 GeV/c [20]; $K^{-} \xrightarrow{p} \varphi$: ○ - 32 GeV/c [18]. Dash - $N_v = 1$, dash-dots - $N_v = 0$. Solid curve - the total spectrum.

Fig. 3. The inclusive spectra of the K(1430) -mesons in the kaon fragmentation region.

a) $K^{+} \xrightarrow{p} K^{+}(1430)$: ● - 32 GeV/c [21]; $K^{-} \xrightarrow{p} K^{-}(1430)$: ○ - 32 GeV/c [22]. Dash - $N_v = 1$ (the fragmentation on the K-meson strange quark), dash-dots - $N_v = 1$ (the fragmentation on the K-meson nonstrange quark), dash-dot-dots - $N_v = 0$. Solid curve - summary spectrum.

b) $K^{+} \xrightarrow{p} K^{o}(1430)$: ● - 32 GeV/c [21]; $K^{-} \xrightarrow{p} \bar{K}^{o}(1430)$: ○ - 32 GeV/c [22]. Dash - $N_v = 1$ (the fragmentation on the -meson strange quark), dash-dots - $N_v = 0$. Solid curve - - summary spectrum.

Fig. 4. The inclusive spectra of K(890)-mesons in the fragmentation region of kaon. Dashed curve - the spectrum of "direct" fragmentation of kaon in K(890). Solid curve - summary spectrum with respect to "direct fragmentation and $K(1430) \rightarrow K(890)\pi$ decays.

a) $K^+ \xrightarrow{p} K^+(890)$: ● - 32 GeV/c [23], ▲ - 70 GeV/c [17];
$K^- \xrightarrow{p} K^-(890)$: ○ - 32 GeV/c [22], △ - 110 GeV/c [19].
b) $K^+ \xrightarrow{p} K^0(890)$: ● - 32 GeV/c [23], ▲ -70 GeV/c [17];
$K^- \xrightarrow{p} \bar{K}^0(890)$: ○ - 32 GeV/c [22], △ - 110 GeV/c [19].

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ОЦЕНКА ПАРАМЕТРОВ СТРУКТУРНЫХ ФУНКЦИЙ К - МЕЗОНА

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