

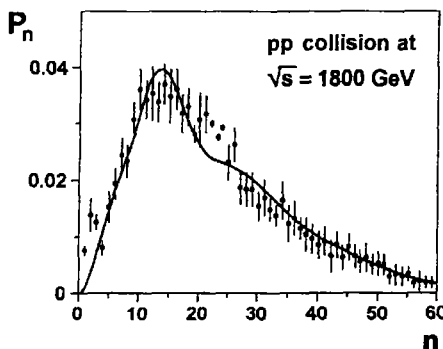


## ON THE MULTIPLE HIGH-ENERGY HADRON GENERATION IN $pp$ AND $p\bar{p}$ - COLLISIONS

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The multiple high-energy generation of hadrons in  $pp$  and  $p\bar{p}$  collisions has been investigated within the dipole pomeron model framework by using the Regge method of complex angular momentum. Taking into account following properties of the elastic scattering amplitude: analyticity, unitarity and cross symmetry, we modified its expression for non-elastic processes that gave us the opportunity to calculate total probability of hadron generation  $P_n = P_n(n)$ , where  $n$  is the number of generating hadrons. All our computing results satisfactorily fit the experimental data [1-3] in wide range of proton energy  $\sqrt{s} = 30 \div 1800$  GeV (see figure as example), besides it has been shown that better fitting can be reached if the diffraction phenomena were taken into account. Our present work was stimulated both by fast progress in charged-particle acceleration engineering and by the development of corresponding theoretical approaches. We suppose that proposed method may appear to be useful for investigating of processes that take place in high-energy hadron-hadron collisions.



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## RARE DECAYS IN THE CHIRAL MODEL

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Presently, much attention is being given to the rare weak decay processes such as  $\phi \rightarrow \omega\pi$ ,  $\tau^- \rightarrow (\omega, \phi) \pi^- \nu_\tau$ ,  $\tau^- \rightarrow (\omega, \phi) K^- \nu_\tau$ . Investigations of these decay channels would provide a clue to solving the problem of the existence of second-class currents [1] and the problem of  $\rho-\omega-\phi$  mixing in these decays. Previously, the decay channels  $\tau^- \rightarrow (\omega, \phi) \pi^- \nu_\tau$  were studied within the conserved-vector-current (CVC) hypothesis [2] and the vector-dominance model [3]. Here, we reviewed our studies on the  $\tau^- \rightarrow (\omega, \phi) \pi^- \nu_\tau$  and  $\phi \rightarrow \omega\pi$  decays [4] taking into account of the secondary importance diagrams and consider the rare decay channels  $\tau^- \rightarrow (\omega, \phi) K^- \nu_\tau$  in the chiral model. The theoretical predictions on these rare decay channels are compared with available experimental data and with the results of other theoretical calculations.

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