Collisions: pp, $\overline{p}p$, pn, and $\overline{p}n$ $p_{\rm lab} > 50$ GeV/c, $\chi^2\,/\,dof = 2.82$

	Value	X_{pn}	Y_{pp}	$Y_{\overline{p}p}$	Y_{pn}	$Y_{\overline{p}n}$	η	ε
X_{pp}	22.0 ± 0.6	99.0	37.0	60.0	38.0	59.0	75.0	−98.0
X_{pn}	22.3 ± 0.6		40.0	63.0	37.0	60.0	76.0	−97.0
Y_{pp}	56.1 ± 4.4			96.0	93.0	93.0	88.0	−21.0
$Y_{\overline{p}p}$	98.2 ± 9.5				91.0	98.0	98.0	−45.0
Y_{pn}	55.0 ± 4.1					94.0	86.0	−22.0
$Y_{\overline{p}n}$	92.7 ± 8.6						96.0	−44.0
η	0.46 ± 0.03							−62.0
ε	0.079 ± 0.003				Correlations %			

Collisions: pd and $\overline{p}d$, $p_{\rm lab} > 50$ GeV/c, $\chi^2\,/\,dof = 1.77$

	Value	Y_{pd}	$Y_{\overline{p}d}$	η	ε
X_{pd}	35.7 ± 2.5	−27.0	9.0	56.0	−99.0
Y_{pd}	179.0 ± 18.8		93.0	64.0	36.0
$Y_{\overline{p}d}$	270.6 ± 29.3			87.0	1.0
η	0.45 ± 0.03				−47.0
ε	0.090 ± 0.008		Correlations %		

Collisions: $\pi^+ p$ and $\pi^- p$, $p_{\rm lab} > 10$ GeV/c, $\chi^2\,/\,dof = 1.66$

	Value	Y_{π^+}	Y_{π^-}	η	ε
X	13.7 ± 0.6	−44.0	11.0	86.0	−99.0
Y_{π^+}	27.8 ± 0.8		83.0	8.0	52.0
Y_{π^-}	35.9 ± 1.1			60.0	−1.3
η	0.45 ± 0.01				−80.0
ε	0.079 ± 0.004		Correlations %		

Collisions: $\pi^+ d$ and $\pi^- d$, $p_{\rm lab} > 10$ GeV/c, $\chi^2\,/\,dof = 1.44$

	Value	Y	η	ε
X	23.2 ± 2.1	73.0	95.0	−99.7
Y	85.5 ± 7.6		91.0	−68.0
η	0.43 ± 0.04			−92.0
ε	0.088 ± 0.010		Correlations %	

Collisions: $K^+ p$, $K^+ n$, $K^- p$, and $K^- n$, $p_{\rm lab} > 10$ GeV/c, $\chi^2\,/\,dof = 4.23$

	Value	Y_+	Y_-	η	ε
X	12.2 ± 0.6	−95.0	−59.0	13.0	−99.0
Y_+	8.3 ± 1.8		77.0	12.0	96.0
Y_-	26.4 ± 2.7			70.0	64.0
η	0.50 ± 0.03				−5.0
ε	0.079 ± 0.006		Correlations %		

Collisions: $K^+ d$ and $K^- d$, $p_{\rm lab} > 10$ GeV/c, $\chi^2\,/\,dof = 1.9$

	Value	Y_+	Y_-	η	ε
X	21.7 ± 0.7	−92.0	−27.0	60.0	−99.7
Y_+	26.2 ± 2.8		57.0	−30.0	94.0
Y_-	64.8 ± 3.4			60.0	33.0
η	0.47 ± 0.01				−54.0
ε	0.082 ± 0.004		Correlations %		

Collisions: γp, $p_{\rm lab} > 12$ GeV/c, $\chi^2\,/\,dof = 0.57$

	Value	Y	η	ε
X	0.071 ± 0.018	76.0	97.0	−99.5
Y	0.12 ± 0.04		90.0	−70.0
η	0.46 ± 0.25			−94.0
ε	0.075 ± 0.030		Correlations %	

Table 36.2: Regge theory provides a simple and compact description of total cross sections (A. Donnachie and P.V. Landshoff, Phys. Lett. **B296**, 227 (1992)): it is sufficient to write $\sigma_{\rm tot} = X\,s^{\varepsilon} + Y\,s^{-\eta}$, where the first term arises from pomeron exchange and the second from ρ, ω, f, and a exchange. Simultaneous fits are shown below for groups of reactions within which ε and η have the same values, and $X_{ab} = X_{\overline{a}b}$. As can be seen from Fig. 36.19, the fitted exponents are consistent with having the same values for all reactions. The fitted functions are shown in the figures, along with the correlated one-standard-deviation error bands which, when the reduced χ^2 is greater than one, include a scale factor that is defined as the square root of the reduced χ^2. Vertical arrows indicate lower limits on the momentum range used in the fits (these momenta are also given in the table). Curves and error bands are extrapolated to lower momenta; the user may decide on the range of applicability. Data used were extracted from the CS database of the Particle Physics Data System (PPDS), accessible throught the WWW at `http://pdg.lbl.gov/`. Computer-readable data files are also available through `http://pdg.lbl.gov/`. (Courtesy of V.V. Ezhela, S.B. Lugovsky, and N.P. Tkachenko, COMPAS Group, IHEP, Protvino.)