

Bild 6.8: Wahrscheinlichkeitsdichte von χ^2 für die Freiheitsgrade $n = 1, 2, \dots, 10$. Mit wachsendem n verschiebt sich der Erwartungswert $E(x^2) = n$ nach rechts.

- aus S. Brandt Datenanalyse

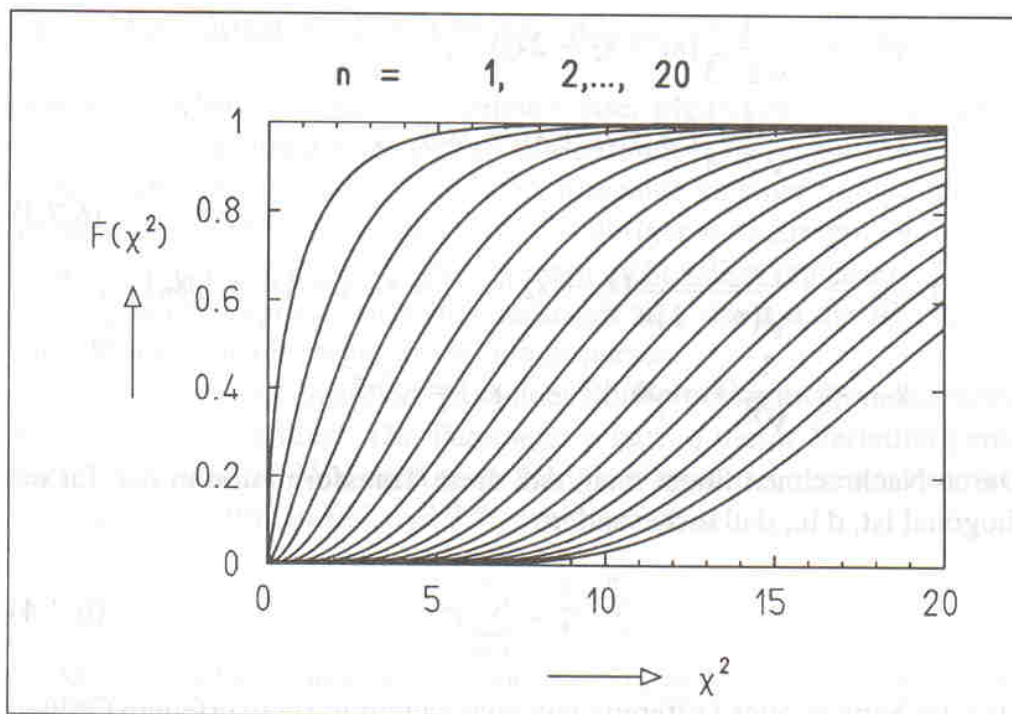


Bild 6.9: Verteilungsfunktion von χ^2 für die Freiheitsgrade $n = 1, 2, \dots, 20$. Die Funktion für $n = 1$ entspricht der Kurve ganz links, die für $n = 20$ der Kurve ganz rechts.

- aus S. Brandt Datenanalyse

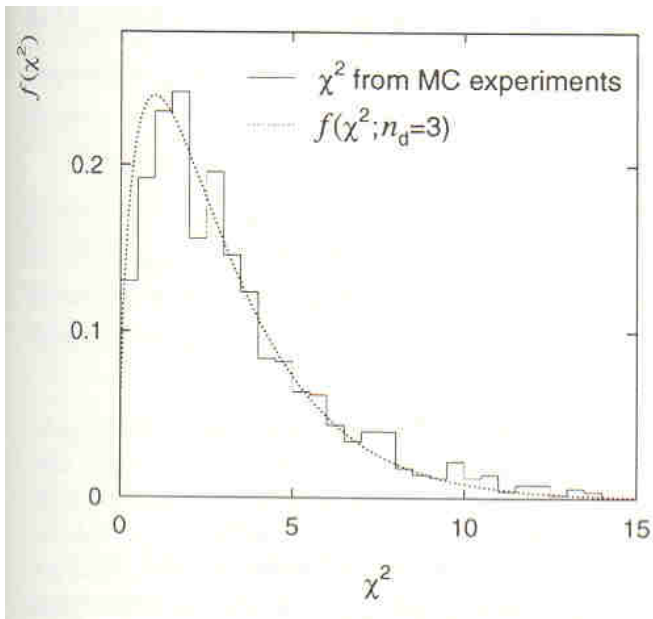


Fig. 7.5 Normalized histogram of χ^2 values from 1000 Monte Carlo experiments along with the predicted χ^2 distribution for three degrees of freedom.

- aus G. Cowan Statistical Data Analysis

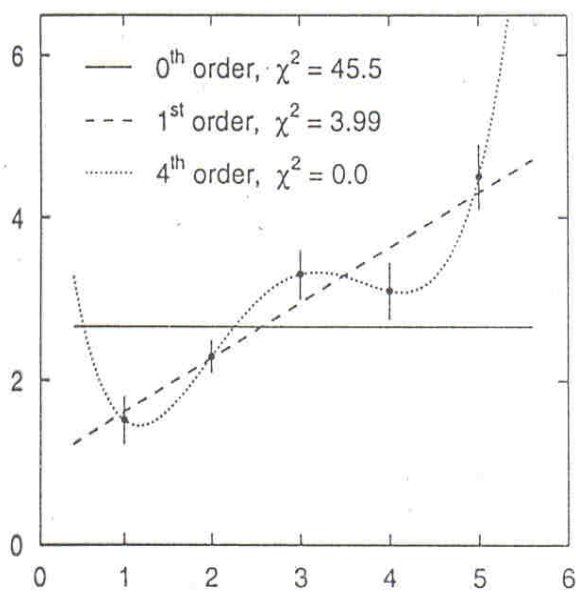


Fig. 7.2 Least squares fits of polynomials of order 0, 1 and 4 to five measured values.

- aus G. Cowan Statistical Data Analysis

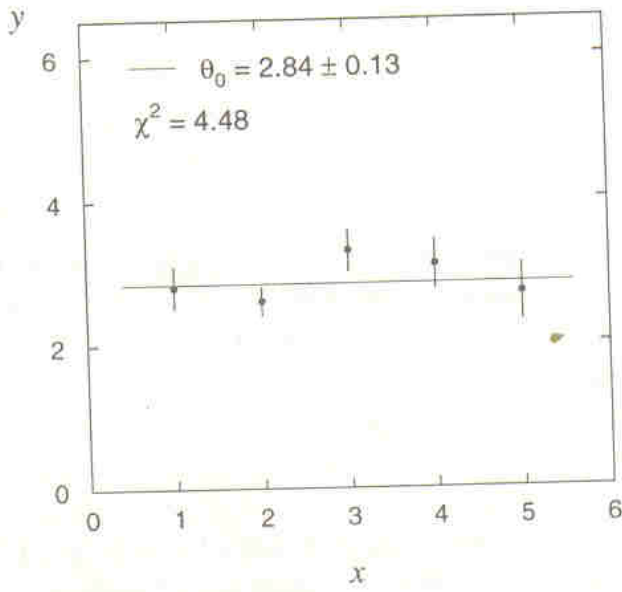


Fig. 7.6 Least squares fit of a polynomial of order 0 to data with the same x values and errors as shown in Fig. 7.2, but with different y values. Although the χ^2 value is much smaller than in the previous example, the error of $\hat{\theta}_0$ remains the same.

- aus G. Cowan Statistical Data Analysis

TABLE 8.1.
CRITICAL χ^2 VALUES

n	$P = 10\%$	$= 5\%$	$= 2\%$	$= 1\%$
1	2.71	3.84	5.41	6.63
2	4.61	5.99	7.82	9.21
3	6.25	7.82	9.84	11.34
4	7.78	9.49	11.67	13.28
5	9.24	11.07	13.39	15.09
6	10.64	12.59	15.03	16.81
7	12.02	14.07	16.62	18.47
8	13.36	15.51	18.17	20.09
9	14.68	16.92	19.68	21.67
10	15.99	18.31	21.16	23.21
11	17.27	19.68	22.62	24.72
12	18.55	21.03	24.05	26.22
13	19.81	22.36	25.47	27.69
14	21.06	23.68	26.87	29.14
15	22.31	25.00	28.26	30.58
16	23.54	26.30	29.63	32.00
17	24.77	27.59	31.00	33.41
18	25.99	28.87	32.35	34.81
19	27.20	30.14	33.69	36.19
20	28.41	31.41	35.02	37.57
21	29.62	32.67	36.34	38.93
22	30.81	33.92	37.66	40.29
23	32.01	35.17	38.97	41.64
24	33.20	36.42	40.27	42.98
25	34.38	37.65	41.57	44.31
26	35.56	38.89	42.86	45.64
27	36.74	40.11	44.14	46.96
28	37.92	41.34	45.42	48.28
29	39.09	42.56	46.69	49.59
30	40.26	43.77	47.96	50.89

- aus R.J. Barlow Statistics

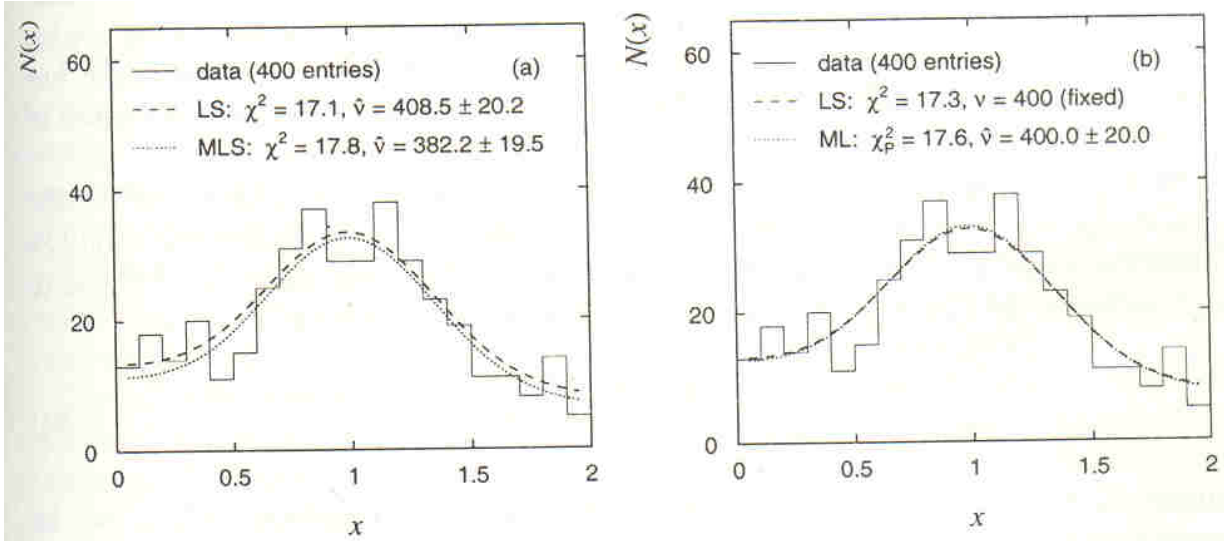


Fig. 7.4 (a) Fits to Monte Carlo data generated according to equation (7.23) where the total number of entries ν is treated as an adjustable parameter. (b) Fit results using the LS method with the total number of entries fixed to the true number and using the method of maximum likelihood (see text).

- aus G. Cowan Statistical Data Analysis