结构计标图表集

第Ⅰ部分

一般結构力学

中国人民解放軍总后方勤务部营房管理部 編

建筑工程出版社

結构計祘图表集第Ⅰ部分

（一般結构力学）

中国人民解放軍总后方勤务部营房管理部　編

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·1959·

內　容　提　要

这一套图表包括六个部分：一般結构力学；鋼筋混凝土結构；木結构；砖石結构；鋼結构；地基与基础。

本部分图表的目的在于簡化房屋設計中力学的計算步驟。內容着重于梁板設計方面各种靜力值的計算系数，也包括确定构件剛度用的一些几何图形的特性。

本图表可作工业及民用建筑結构設計人員的設計手冊或供有关工作人員参考。

結构計标圖表集第Ⅰ部分

（一般結构力学）

中国人民解放軍总后方勤务部营房管理部　編

編　輯：黎　鐘

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前　言

在建筑結构計算方面，利用图表法不仅可以簡化計算程序，而且还可以避免运算上的錯誤。几年来，我部設計处根据工作需要，把常用的計算公式和常用的数据繪成图表，提高工作效率很多。这次我們把过去使用的图表系統地整理出来，目的是給我軍內部各設計單位参考。后以这类图表已出版的尙不多，为了提供其他設計部門和有关工作人員交流經驗計，商得出版社同意，公开出版。冀能抛磚引玉，使結构計算的应用图表日趋完善。

这里的图表，一部分是我們自己繪制的，一部分是从各种参考資料上抄录下来的。为了便于使用，将图表分为六个部分出版：

第一部分	一般結构力学
第二部分	鋼筋混凝土結构
第三部分	木結构
第四部分	磚石結构
第五部分	鋼結构
第六部分	地基与基础

其中木結构及地基与基础的图表是根据建筑工程部頒发的暫行規范編制的；鋼筋混凝土結构、磚石結构与鋼結构是根据苏联1955年的新規范編制的，特此說明。

由于我們技术水平关系，不仅所編数量有限，且錯誤在所难免，望讀者多加指正。

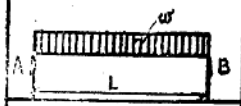
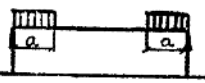
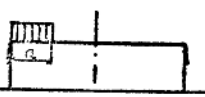
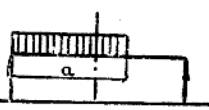
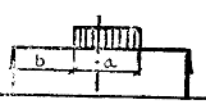
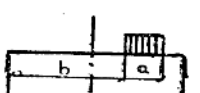
中国人民解放軍总后方勤务部营房管理部

1958年7月

图表內容簡略說明

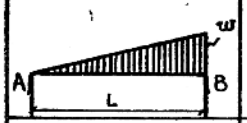
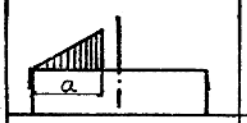
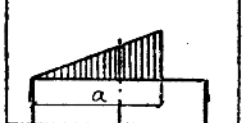
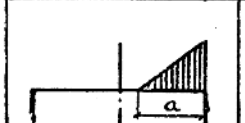
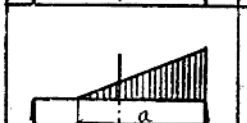
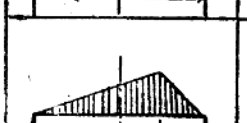
这一部分图表收集了关于計算梁、板結构的主要公式和常用系数，另外还有各种形状截面的几何特性、計算公式及系数。虽然这些数据和公式許多結构力学書籍上都有，但比較另散，查閱不方便。这里比較系統地把这些資料整理出来，以供計算結构时參考。

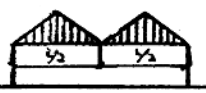
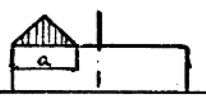
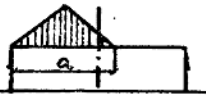
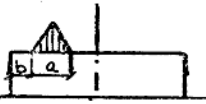
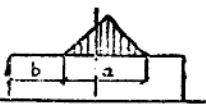
目　　录

荷　　载	支座反力与最大弯矩	支座挠角与跨中挠度
	$R_A=\frac{wL}{2}$ $R_B=\frac{wL}{2}$ $M_{max}=\frac{wL^2}{8}$	$\theta_A=-\frac{wL^3}{24EJ}$ $\theta_B=\frac{wL^3}{24EJ}$ $y_C=-\frac{5wL^4}{384EJ}$
	$R_A=wa$ $R_B=wa$ $M_{max}=\frac{wa^2}{2}$	$\theta_A=-\frac{wa^2}{12EJ}(3L-2a)$ $\theta_B=\frac{wa^2}{12EJ}(3L-2a)$ $y_C=-\frac{wa^2}{48EJ}(3L^2-2a^2)$
	$R_A=wa(1-\frac{a}{2L})$ $R_B=\frac{wa^2}{2L}$ $M_{max}=\frac{1}{2}wa^2(1-\frac{a}{2L})^2$	$\theta_A=-\frac{wa^2}{24EJ}(\frac{a^2}{L}+4L-4a)$ $\theta_B=\frac{wa^2}{24EJ}(2L-\frac{a^2}{L})$ $y_C=-\frac{wa^2}{96EJ}(3L^2-2a^2)$
	$R_A=wa(1-\frac{a}{2L})$ $R_B=\frac{wa^2}{2L}$ $M_{max}=\frac{1}{2}wa^2(1-\frac{a}{2L})^2$	$\theta_A=-\frac{wa^2}{24EJ}(\frac{a^2}{L}+4L-4a)$ $\theta_B=\frac{wa^2}{24EJ}(2L-\frac{a^2}{L})$ $y_C=-\frac{w}{384EJ}(L^4-8aL^3+36a^2L^2-32a^3L+8a^4)$
	$R_A=\frac{wa}{L}(L-b-\frac{a}{2})$ $R_B=\frac{wa}{L}(b+\frac{a}{2})$ $M_{max}=\frac{wa}{L}(L-b-\frac{a}{2})[\frac{a}{2L}(L-b-\frac{a}{2})+b]$	$\theta_A=-\frac{w}{24EJ}[4aL(L-b-\frac{a}{2})-\frac{1}{L}(L-b)^4+\frac{1}{L}(L-a-b)^4]$ $\theta_B=\frac{w}{24EJ}[8aL(L-b-\frac{a}{2})-(3+\frac{b}{L})(L-b)^3+(3+\frac{a+b}{L})(L-a-b)^3]$ $y_C=-\frac{w}{48EJ}[3aL^2(L-b-\frac{a}{2})-(L-b)^4+(L-a-b)^4+2(\frac{1}{2}-b)^4]$
	$R_A=\frac{wa}{L}(L-b-\frac{a}{2})$ $R_B=\frac{wa}{L}(b+\frac{a}{2})$ $M_{max}=\frac{wa}{L}(L-b-\frac{a}{2})[\frac{a}{2L}(L-b-\frac{a}{2})+b]$	$\theta_A=-\frac{w}{24EJ}[4aL(L-b-\frac{a}{2})-\frac{1}{L}(L-b)^4+\frac{1}{L}(L-a-b)^4]$ $\theta_B=\frac{w}{24EJ}[8aL(L-b-\frac{a}{2})-(3+\frac{b}{L})(L-b)^3+(3+\frac{a+b}{L})(L-a-b)^3]$ $y_C=-\frac{w}{48EJ}[3aL^2(L-b-\frac{a}{2})-(L-b)^4+(L-a-b)^4]$

I－1

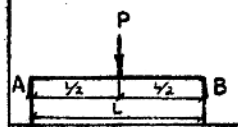
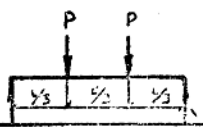
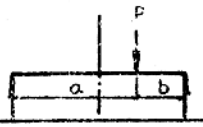
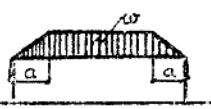
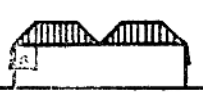
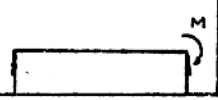
简支梁弯矩、反力挠度、挠角公式

荷　　载	支座反力与最大弯矩	支座挠角与跨中挠度
	$R_A=\frac{wL}{6}$ $R_B=\frac{wL}{3}$ $M_{max}=\frac{wL^2}{9\sqrt{3}}$	$\theta_A=-\frac{7wL^3}{360EJ}$ $\theta_B=\frac{wL^3}{45EJ}$ $y_c=-\frac{5wL^4}{768EJ}$
	$R_A=wa\left(\frac{1}{2}-\frac{a}{3L}\right)$ $R_B=\frac{wa^2}{3L}$ $M_{max}=\frac{wa^2}{3}\sqrt{\left(1-\frac{2a}{3L}\right)^3}$	$\theta_A=-\frac{wa^2}{6EJ}\left(\frac{2L}{3}-\frac{3a}{4}+\frac{a^2}{5L}\right)$ $\theta_B=\frac{wa^2}{18EJ}\left(L-\frac{3a^2}{5L}\right)$ $y_c=-\frac{wa^2}{12EJ}\left(\frac{L^2}{4}-\frac{a^2}{5}\right)$
	$R_A=wa\left(\frac{1}{2}-\frac{a}{3L}\right)$ $R_B=\frac{wa^2}{3L}$ $M_{max}=\frac{wa^2}{3}\sqrt{\left(1-\frac{2a}{3L}\right)^3}$	$\theta_A=-\frac{wa^2}{6EJ}\left(\frac{2L}{3}-\frac{3a}{4}+\frac{a^2}{5L}\right)$ $\theta_B=\frac{wa^2}{18EJ}\left(L-\frac{3a^2}{5L}\right)$ $y_c=-\frac{w}{4EJ}\left(\frac{a^4}{15}-\frac{a^3L}{4}+\frac{a^2L^2}{4}-\frac{aL^3}{24}+\frac{L^4}{960a}\right)$
	$R_A=\frac{wa^2}{6L}$ $R_B=\frac{wa}{2}\left(1-\frac{a}{3L}\right)$ $M_{max}=\frac{wa^2}{6L}\left(\frac{2a}{3}\sqrt{\frac{a}{3L}}+L-a\right)$	$\theta_A=-\frac{wa^2L}{12EJ}\left(\frac{1}{3}-\frac{a^2}{10L^2}\right)$ $\theta_B=\frac{wa^2L}{6EJ}\left(\frac{1}{3}+\frac{a^2}{20L^2}-\frac{a}{4L}\right)$ $y_c=-\frac{wa^2}{480EJ}\left(5L^2-2a^2\right)$
	$R_A=\frac{wa^2}{6L}$ $R_B=\frac{wa}{2}\left(1-\frac{a}{3L}\right)$ $M_{max}=\frac{wa^2}{6L}\left(\frac{2a}{3}\sqrt{\frac{a}{3L}}+L-a\right)$	$\theta_A=-\frac{wa^2L}{12EJ}\left(\frac{1}{3}-\frac{a^2}{10L^2}\right)$ $\theta_B=\frac{wa^2L}{6EJ}\left(\frac{1}{3}+\frac{a^2}{20L^2}-\frac{a}{4L}\right)$ $y_c=-\frac{w}{480EJ}\left[a^2\left(5L^2-2a^2\right)+\frac{4}{a}\left(a-\frac{L}{2}\right)^5\right]$
	$R_A=\frac{w}{6}(2L-a)$ $R_B=\frac{w}{6}(L+a)$ $M_{max}=\frac{w}{9}(2L-a)\sqrt{\frac{a}{3}(2L-a)}$	$\theta_A=-\frac{w}{6EJ}\left[\frac{L^3}{6}(2L-a)-\frac{a}{2L}\left(L-\frac{2a}{3}\right)^3-\frac{1}{8L}(L-a)^4+\frac{7a^4}{135L}-\frac{a^3}{12}\right]$ $\theta_B=\frac{w}{12EJ}\left[\frac{L^2}{9}(2L-a)-\frac{a}{2}\left(L-\frac{2a}{3}\right)^2-\frac{1}{4}(L-a)^3+\frac{a}{6L}\left(L-\frac{2a}{3}\right)^3+\frac{w}{15L}(L-a)^4-\frac{7a^4}{405L}\right]$ $y_c=-\frac{w}{12EJ}\left[\frac{L^3}{8}(2L-a)+\frac{L^5}{320a}-\frac{a}{2}\left(L-\frac{2a}{3}\right)^3-\frac{1}{3}(L-a)^4-\frac{7a^4}{135}-\frac{a^3L}{12}\right]$
		I－2 简支梁弯矩，反力 挠度，挠角公式．

荷　　载	支座反力与最大弯矩	支座挠角与跨中挠度
	$R_A=\frac{wL}{4}$ $R_B=\frac{wL}{4}$ $M_{max}=\frac{wL^2}{12}$	$\theta_A=-\frac{5wL^3}{192EJ}$ $\theta_B=\frac{5wL^3}{192EJ}$ $y_c=-\frac{wL^4}{120EJ}$
	$R_A=\frac{wL}{4}$ $R_B=\frac{wL}{4}$ $M_{max}=\frac{wL^2}{16}$	$\theta_A=-\frac{67wL^3}{3072EJ}$ $\theta_B=\frac{67wL^3}{3072EJ}$ $y_c=-\frac{5wL^4}{1024EJ}$
	$R_A=\frac{wa}{2}(1-\frac{a}{2L})$ $R_B=\frac{wa^2}{4L}$ $M_{max}=\frac{wa^2}{3\sqrt{2}}\sqrt{(1-\frac{a}{2L})^3}$	$\theta_A=-\frac{wa^2}{24EJ}(2L-\frac{7a}{4}+\frac{3a^2}{8L})$ $\theta_B=\frac{wa^2}{24EJ}(L-\frac{3a^2}{8L})$ $y_c=-\frac{wa}{48EJ}(L-\frac{a}{2})(2aL-\frac{L^2}{2}-\frac{3a^2}{4})$
	$R_A=\frac{wa}{2}(1-\frac{a}{2L})$ $R_B=\frac{wa^2}{4L}$ $M_{max}=\frac{wa^2}{3\sqrt{2}}\sqrt{(1-\frac{a}{2L})^3}$	$\theta_A=-\frac{wa^2}{24EJ}(2L-\frac{7a}{4}+\frac{3a^2}{8L})$ $\theta_B=\frac{wa^2}{24FJ}(L-\frac{3a^2}{8L})$ $y_c=-\frac{w}{48EJ}[\frac{L^5}{40a}-a(1-\frac{a}{2})(\frac{L^2}{2}-2aL+\frac{3a^2}{4})]$
	$R_A=\frac{wa}{2}(1-\frac{b}{L}-\frac{a}{2L})$ $R_B=\frac{wa}{2}(\frac{b}{L}+\frac{a}{2L})$ $M_{max}=\frac{wa}{2}(1-\frac{b}{L}-\frac{a}{2L})(b+\frac{a}{3}\sqrt{2(1-\frac{b}{L}-\frac{a}{2L})})$	$\theta_A=-\frac{wa}{12EJL}(L-b-\frac{a}{2})[(b+\frac{a}{2})(2L-b-\frac{a}{2})-\frac{a^2}{8}]$ $\theta_B=\frac{wa}{12EJL}(b+\frac{a}{2})[(L-b-\frac{a}{2})(L+b+\frac{a}{2})-\frac{a^2}{8}]$ $y_c=-\frac{wa}{24EJ}(L-b-\frac{a}{2})[(2L-b-\frac{a}{2})(b+\frac{a}{2})-\frac{1}{8}(2L^2+a^2)]$
	$R_A=\frac{wa}{2}(1-\frac{b}{L}-\frac{a}{2L})$ $R_B=\frac{wa}{2}(\frac{b}{L}+\frac{a}{2L})$ $M_{max}=\frac{wa}{2}(1-\frac{b}{L}-\frac{a}{2L})(b+\frac{a}{3}\sqrt{2(1-\frac{b}{L}-\frac{a}{2L})})$	$\theta_A=-\frac{wa}{12EJL}(L-b-\frac{a}{2})[(b+\frac{a}{2})(2L-b-\frac{a}{2})-\frac{a^2}{8}]$ $\theta_B=\frac{wa}{12EJL}(b+\frac{a}{2})[(L-b-\frac{a}{2})(L+b+\frac{a}{2})-\frac{a^2}{8}]$ $y_c=-\frac{w}{12EJ}\{\frac{a}{2}(L-b-\frac{a}{2})[(2L-b-\frac{a}{2})(b+\frac{a}{2})-\frac{1}{8}(2L^2+a^2)]+\frac{1}{5a}(\frac{L}{2}-b)^5\}$

I－3

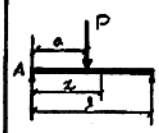
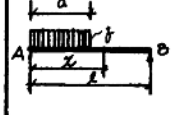
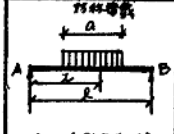
简支梁弯矩，反力挠度，挠角公式。

荷　　载	支座反力与最大弯矩	支座挠角与跨中挠度
	$R_A=\frac{P}{2}$ $R_B=\frac{P}{2}$ $M_{max}=\frac{PL}{4}$	$\theta_A=-\frac{PL^2}{16EJ}$ $\theta_B=\frac{PL^2}{16EJ}$ $y_c=-\frac{PL^3}{48EJ}$
	$R_A=P$ $R_B=P$ $M_{max}=\frac{PL}{3}$	$\theta_A=-\frac{PL^2}{9EJ}$ $\theta_B=\frac{PL^2}{9EJ}$ $y_c=-\frac{23PL^3}{648EJ}$
	$R_A=\frac{Pb}{L}$ $R_B=\frac{Pa}{L}$ $M_{max}=\frac{Pab}{L}$	$\theta_A=-\frac{Pab(L+b)}{6LEJ}$ $\theta_B=\frac{Pab(L+a)}{6LEJ}$ $y_c=-\frac{Pb}{48EJ}(3L^2-4b^2)$
	$R_A=\frac{q}{2}(L-a)$ $R_B=\frac{q}{2}(L-a)$ $M_{max}=\frac{qL^2}{8}-\frac{qa^2}{8}$	$\theta_A=-\frac{q}{12EJ}(\frac{L^3}{2}+\frac{a^3}{2}-a^2L)$ $\theta_B=\frac{q}{12EJ}(\frac{L^3}{2}+\frac{a^3}{2}-a^2L)$ $y_c=-\frac{q}{24EJ}(\frac{5L^4}{16}-\frac{a^2L^2}{2}+\frac{a^4}{5})$
	$R_A=q(\frac{L}{2}-a)$ $R_B=q(\frac{L}{2}-a)$ $M_{max}=\frac{qL^2}{8}(1-\frac{2a}{L})$	$\theta_A=-\frac{q}{48EJ}(2L^3-4a^2L-3aL^2+4a^3)$ $\theta_B=\frac{q}{48EJ}(2L^3-4a^2L-3aL^2+4a^3)$ $y_c=-\frac{qL}{48EJ}(\frac{5L^3}{8}-aL^2-a^2L+a^3)$
	$R_A=\frac{M}{L}$ $R_B=\frac{M}{L}$ $M_{max}=M$	$\theta_A=+\frac{ML}{6EJ}$ $\theta_B=-\frac{ML}{3EJ}$ $y_c=+\frac{ML^2}{16EJ}$

I－4

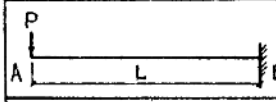
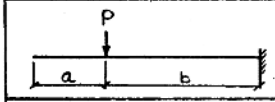
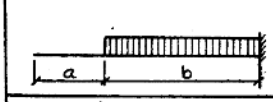
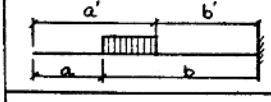
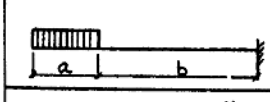
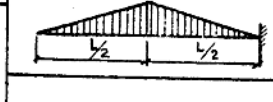
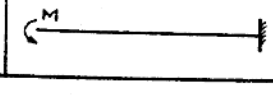
简支梁弯矩.反力 挠度.挠角公式

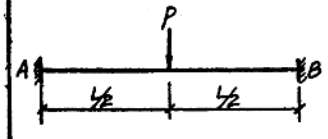
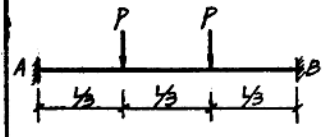
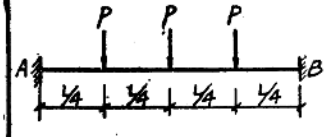
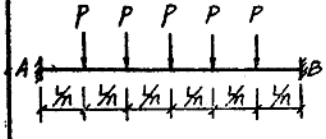
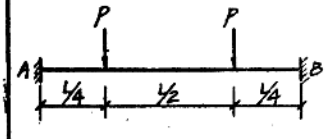
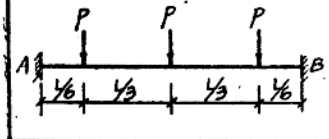
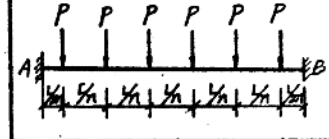
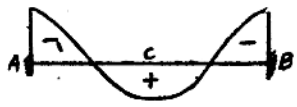
简支梁各截面的弯矩和支座反力

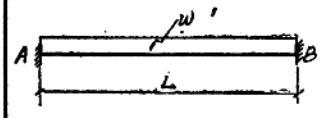
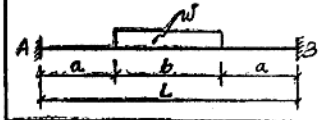
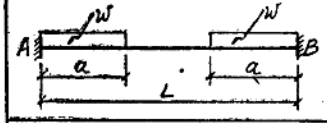
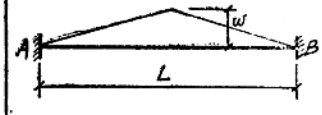
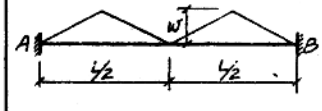
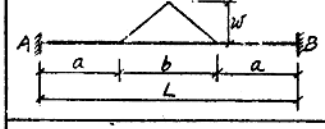
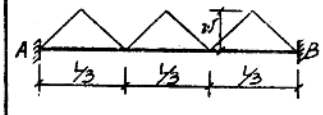
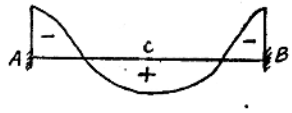
荷载简图	q/l	系数 z/l	0.1	0.2	0.25	0.3	0.4	0.5	0.6	0.7	0.75	0.8	0.9	A	B
		ql^2	0.045	0.080	0.094	0.105	0.120	0.125	0.120	0.105	0.094	0.080	0.045	0.5 ql	0.5 ql
		ql^2	0.0285	0.0480	0.0548	0.0595	0.0640	0.0627	0.0560	0.0457	0.0391	0.0321	0.0165	0.333 ql	0.167 ql
		ql^2	0.0274	0.0474	0.0572	0.0660	0.0788	0.0834	0.0788	0.0666	0.0572	0.0474	0.0274	0.250 ql	0.250 ql
 A,D 支数为 P	0.1	Pl	0.09	0.08	0.075	0.07	0.06	0.05	0.04	0.03	0.025	0.02	0.01	0.9	0.1
	0.2	Pl	0.08	0.16	0.15	0.14	0.12	0.10	0.08	0.06	0.05	0.04	0.02	0.8	0.2
	0.25	Pl	0.075	0.15	0.189	0.175	0.15	0.125	0.10	0.075	0.062	0.05	0.025	0.75	0.25
	0.3	Pl	0.07	0.14	0.175	0.21	0.18	0.15	0.12	0.09	0.075	0.06	0.03	0.7	0.3
	0.333	Pl	0.067	0.133	0.167	0.20	0.20	0.167	0.133	0.10	0.084	0.067	0.033	0.667	0.333
	0.4	Pl	0.06	0.12	0.15	0.18	0.24	0.20	0.16	0.12	0.10	0.08	0.04	0.6	0.4
	0.5	Pl	0.05	0.10	0.125	0.15	0.20	0.25	0.20	0.15	0.125	0.10	0.05	0.5	0.5
	0.6	Pl	0.04	0.08	0.10	0.12	0.16	0.20	0.24	0.18	0.15	0.12	0.06	0.4	0.6
	0.667	Pl	0.033	0.067	0.084	0.10	0.133	0.167	0.20	0.20	0.167	0.133	0.067	0.333	0.667
	0.7	Pl	0.03	0.06	0.075	0.09	0.12	0.15	0.18	0.21	0.175	0.14	0.07	0.3	0.4
	0.75	Pl	0.025	0.05	0.062	0.075	0.10	0.125	0.15	0.175	0.188	0.15	0.075	0.25	0.75
	0.8	Pl	0.02	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.15	0.16	0.08	0.2	0.8
	0.9	Pl	0.01	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.075	0.08	0.09	0.1	0.9
 A,D 系数为 $\frac{q}{2}l$	0.1	ql^2	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001	—	0.095	0.005
	0.2	ql^2	0.013	0.016	0.015	0.014	0.012	0.010	0.008	0.006	0.005	0.004	0.002	0.180	0.020
	0.25	ql^2	0.017	0.024	0.023	0.022	0.019	0.016	0.012	0.009	0.008	0.006	0.003	0.219	0.031
	0.3	ql^2	0.021	0.031	0.033	0.031	0.027	0.023	0.018	0.014	0.011	0.009	0.005	0.255	0.045
	0.333	ql^2	0.023	0.036	0.038	0.038	0.033	0.028	0.022	0.017	0.014	0.011	0.006	0.277	0.055
	0.4	ql^2	0.027	0.044	0.049	0.051	0.048	0.040	0.032	0.024	0.020	0.016	0.008	0.320	0.080
	0.5	ql^2	0.032	0.055	0.063	0.068	0.070	0.063	0.050	0.038	0.031	0.025	0.013	0.375	0.125
	0.6	ql^2	0.037	0.064	0.074	0.081	0.088	0.085	0.072	0.054	0.045	0.036	0.018	0.420	0.180
	0.667	ql^2	0.040	0.069	0.080	0.089	0.098	0.098	0.087	0.067	0.056	0.045	0.022	0.445	0.222
	0.7	ql^2	0.041	0.071	0.083	0.091	0.102	0.103	0.093	0.073	0.061	0.049	0.025	0.456	0.244
	0.75	ql^2	0.042	0.074	0.086	0.096	0.108	0.110	0.102	0.084	0.070	0.056	0.028	0.470	0.280
	0.8	ql^2	0.043	0.076	0.089	0.099	0.112	0.115	0.108	0.091	0.079	0.064	0.032	0.480	0.320
	0.9	ql^2	0.045	0.079	0.093	0.104	0.118	0.123	0.117	0.102	0.090	0.076	0.040	0.495	0.405
均布荷载  A,D 系数为 $\frac{q}{2}l$	0.1	ql^2	0.005	0.010	0.013	0.015	0.020	0.024	0.020	0.015	0.013	0.010	0.005	0.05 ql	0.05 ql
	0.2	ql^2	0.010	0.020	0.025	0.030	0.040	0.045	0.040	0.030	0.025	0.020	0.010	0.10 ql	0.10 ql
	0.26	ql^2	0.013	0.025	0.031	0.038	0.050	0.055	0.050	0.038	0.031	0.025	0.013	0.125 ql	0.125 ql
	0.3	ql^2	0.015	0.030	0.038	0.045	0.059	0.064	0.059	0.045	0.038	0.030	0.015	0.16 ql	0.15 ql
	0.333	ql^2	0.017	0.033	0.042	0.050	0.065	0.070	0.065	0.050	0.042	0.033	0.017	0.167 ql	0.167 ql
	0.4	ql^2	0.020	0.040	0.050	0.060	0.075	0.080	0.075	0.060	0.050	0.040	0.020	0.20 ql	0.20 ql
	0.5	ql^2	0.025	0.050	0.063	0.074	0.089	0.094	0.089	0.074	0.063	0.050	0.025	0.25 ql	0.25 ql
	0.6	ql^2	0.030	0.060	0.074	0.085	0.100	0.105	0.100	0.085	0.074	0.060	0.030	0.30 ql	0.30 ql
	0.70	ql^2	0.035	0.069	0.083	0.094	0.109	0.114	0.109	0.094	0.083	0.069	0.035	0.35 ql	0.35 ql
	0.75	ql^2	0.038	0.073	0.087	0.098	0.113	0.118	0.113	0.098	0.087	0.073	0.038	0.375 ql	0.375 ql
	0.8	ql^2	0.040	0.075	0.089	0.100	0.115	0.120	0.115	0.100	0.089	0.075	0.040	0.40 ql	0.40 ql
	0.9	ql^2	0.044	0.078	0.093	0.104	0.119	0.124	0.119	0.104	0.093	0.079	0.044	0.45 ql	0.45 ql

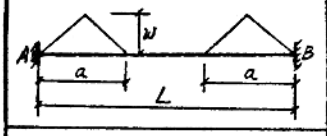
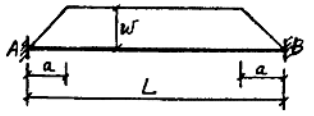
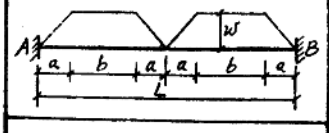
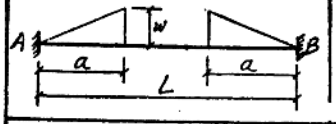
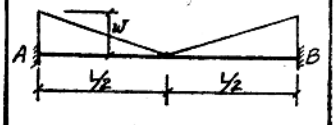
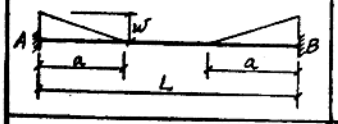
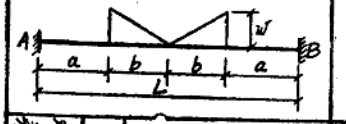
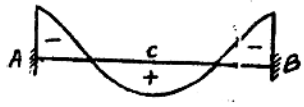
I—5 简支梁各截面的弯矩和支座反力

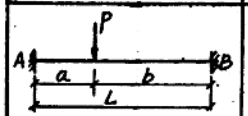
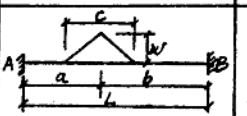
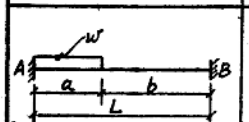
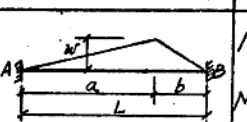
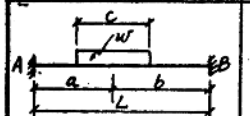
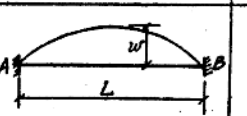
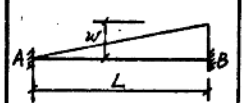
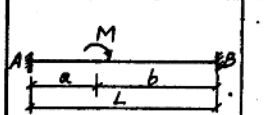
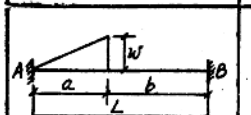
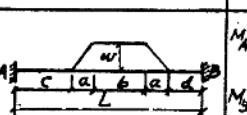
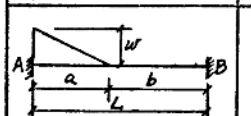
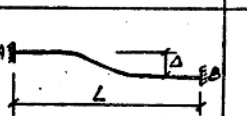
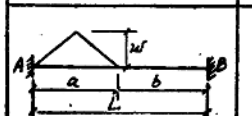
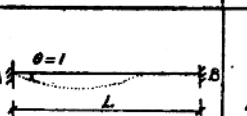
I—6 懸臂梁彎矩反力撓度公式.

荷載	固端反力	固端彎矩	自由端撓度
	$R_B=P$	$M_B=-PL$	$y_A=-\frac{PL^3}{3EJ}$
	$R_B=P$	$M_B=-Pb$	$y_A=-\frac{Pb^2}{EJ}\left(\frac{a}{2}+\frac{b}{3}\right)$
	$R_B=\omega L$	$M_B=-\frac{\omega L^2}{2}$	$y_A=-\frac{\omega L^4}{8EJ}$
	$R_B=\omega b$	$M_B=-\frac{\omega b^2}{2}$	$y_A=-\frac{\omega b^3}{2EJ}\left(\frac{a}{3}+\frac{b}{4}\right)$
	$R_B=\omega(b-b')$	$M_B=-\frac{\omega(b^2-b'^2)}{2}$	$y_A=-\frac{\omega}{2EJ}\left(\frac{ab^2-ab'^2}{3}+\frac{b^4-b'^4}{4}\right)$
	$R_B=\omega a$	$M_B=-\omega a\left(\frac{a}{2}+b\right)$	$y_A=-\frac{\omega a}{EJ}\left(\frac{a^3}{8}+\frac{a^2b}{2}+\frac{3ab^2}{4}+\frac{b^3}{3}\right)$
	$R_B=\frac{\omega L}{2}$	$M_B=-\frac{\omega L^2}{6}$	$y_A=-\frac{\omega L^4}{30EJ}$
	$R_B=\frac{\omega a}{2}$	$M_B=-\frac{\omega a^2}{6}$	$y_A=-\frac{\omega a^3}{120EJ}(5L-a)$
	$R_B=\frac{\omega L}{2}$	$M_B=-\frac{\omega L^2}{3}$	$y_A=-\frac{11\omega L^4}{120EJ}$
	$R_B=\frac{\omega a}{2}$	$M_B=-\frac{\omega a}{2}\left(L-\frac{a}{3}\right)$	$y_A=-\frac{\omega a}{120EJ}(20L^3-10aL^2+a^3)$
	$R_B=\frac{\omega L}{2}$	$M_B=-\frac{\omega L^2}{4}$	$y_A=-\frac{11\omega L^4}{192EJ}$
	——	$M_B=-M$	$y_A=-\frac{ML^2}{2EJ}$

荷　　載	固端支座彎矩	固端跨中彎矩
	$M_A=M_B=-\frac{1}{8}PL$	$M_C=\frac{1}{8}PL$
	$M_A=M_B=-\frac{2}{9}PL$	$M_C=\frac{1}{9}PL$
	$M_A=M_B=-\frac{5}{16}PL$	$M_C=\frac{3}{16}PL$
	$M_A=M_B=-\frac{n^2-1}{12n}PL$	$M_C=\frac{n^2-1}{24n}PL$（n為奇數） $M_C=\frac{n^2+2}{24n}PL$（n為偶數）
	$M_A=M_B=-\frac{3}{16}PL$	$M_C=\frac{1}{16}PL$
	$M_A=M_B=-\frac{19}{72}PL$	$M_C=\frac{11}{72}PL$
	$M_A=M_B=-\frac{n^2+0.5}{12n}PL$	$M_C=\frac{n^2+2}{24n}PL$（n為奇數） $M_C=\frac{n^2-1}{24n}PL$（n為偶數）
對於荷載一端固定一端簡支之彎矩	1－7	

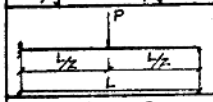
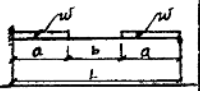
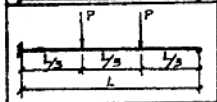
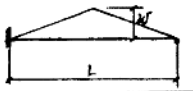
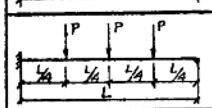
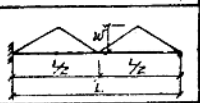
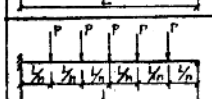
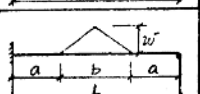
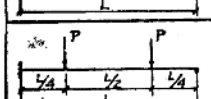
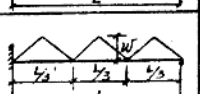
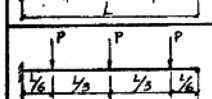
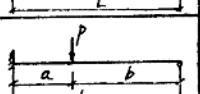
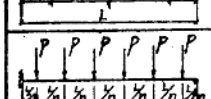
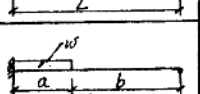
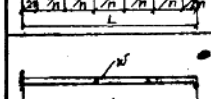
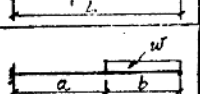
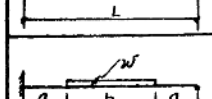
荷　　載	固端支座彎矩	固端跨中彎矩
	$M_A=M_B=-\frac{1}{12}wL^2$	$M_C=\frac{1}{24}wL^2$
	$M_A=M_B=-\frac{wb}{24L}(3L^2-b^2)$	$M_C=\frac{wb}{24L}(3L^2-3Lb+b^2)$
	$M_A=M_B=-\frac{wa^2}{6L}(3L-2a)$	$M_C=\frac{wa^3}{3L}$
	$M_A=M_B=-\frac{5}{96}wL^2$	$M_C=\frac{1}{32}wL^2$
	$M_A=M_B=-\frac{17}{384}wL^2$	$M_C=\frac{7}{384}wL^2$
	$M_A=M_B=-\frac{wb}{96L}(6L^2-b^2)$	$M_C=\frac{wb}{96L}(6L^2-4Lb+b^2)$
	$M_A=M_B=-\frac{37}{864}wL^2$	$M_C=\frac{19}{864}wL^2$
等截面梁固端彎矩 I-8		

荷　　載	固端支座弯矩	固端跨中弯矩
	$M_A=M_B=-\frac{wa^2}{48L}(12L-7a)$	$M_C=\frac{7wa^3}{48L}$
	$M_A=M_B=-\frac{w}{12L}(L^3-2a^2L+a^3)$	$M_C=\frac{w}{24L}(L^3-2a^3)$
	$M_A=M_B=-\frac{w}{24L}(2L^3-4a^2L-3aL^2+4a^3)$	$M_C=\frac{w}{24L}(L^3-3aL^2+4a^2L-4a^3)$
	$M_A=M_B=-\frac{wa^2}{12L}(4L-3a)$	$M_C=\frac{wa^3}{4L}$
	$M_A=M_B=-\frac{1}{32}wL^2$	$M_C=\frac{1}{96}wL^2$
	$M_A=M_B=-\frac{wa^2}{12L}(2L-a,$	$M_C=\frac{wa^3}{12L}$
	$M_A=M_B=-\frac{wb}{8L}(L^2-2b^2)$	$M_C=\frac{wb}{24L}[3L^2-8bL+6b^2]$
对称荷载一端固定梁固端及跨中弯矩　I-9		

荷　　载	固端支座弯矩	荷　　载	固端支座弯矩
	$M_A=-\frac{Pab^2}{L^2}$ $M_B=-\frac{Pa^2b}{L^2}$		$M_A=-\frac{Wc}{48L^2}[c^2(a-2b)+24ab^2]$ $M_B=-\frac{Wc}{48L^2}[c^2(b-2a)+24a^2b]$
	$M_A=-\frac{Wa^2}{12L^2}(6L^2-8aL+3a^2)$ $M_B=-\frac{Wa^3}{12L^2}(4L-3a)$		$M_A=-\frac{W}{60L^2}(12a^4-30a^3L+20a^2L^2+15b^3L-12b^4)$ $M_B=-\frac{W}{60L^2}(12b^4-30b^3L+20b^2L^2+15a^3L-12a^4)$
	$M_A=-\frac{Wc}{12L^2}[12ab^2-(2b-a)c^2]$ $M_B=-\frac{Wc}{12L^2}[12a^2b-(2a-b)c^2]$		$M_A=M_B=-\frac{1}{15}WL^2$
	$M_A=-\frac{1}{30}WL^2$ $M_B=-\frac{1}{20}WL^2$		$M_A=\frac{Mb}{L^2}(2a-b)$ $M_B=-\frac{Ma}{L^2}(2b-a)$
	$M_A=-\frac{Wa^2}{30L^2}(10L^2-15aL+6a^2)$ $M_B=-\frac{Wa^3}{20L^2}(5b+a)$		$M_A=-\frac{W}{12L^2}\{2a(L-c-\frac{3a}{5})^2(3c+2a)+(L-a-d)^2(L+3c+3a)$ $-2a(\frac{a}{3}+d)^2(5L-a-3d)-d^2(4L-3d)-d^2(a+b)\}$ $M_B=-\frac{W}{12L^2}\{(a+b)(12L^2(a+\frac{b}{2}+d)+d^2)-2a(L-c-\frac{2a}{5})^2(2L+3c+2a)$ $-(L-c-a)^2(5L+3c+3a)+2a(\frac{a}{3}+d)^2(6L-a-3d)+d^2(8L-3d)\}$
	$M_A=-\frac{Wa^2}{60L^2}(10bL+3a^2)$ $M_B=-\frac{Wa^3}{60L^2}(5b+2a)$		$M_A=-\frac{6EJ\Delta}{L^2}$ $M_B=\frac{6EJ\Delta}{L^2}$
	$M_A=-\frac{Wa^2}{96L^2}(5a^2+20ab+24b^2)$ $M_B=-\frac{Wa^3}{96L^2}(14b+5a)$		$M_A=\frac{4EJ}{L}$ $M_B=-\frac{2EJ}{L}$

I-10

不对称荷载二端固定梁固端弯矩

荷　载	固端支座弯矩	荷　载	固端支座弯矩
	$M=-\frac{3}{16}PL$		$M=-\frac{wa^2}{4L}(3L-2a)$
	$M=-\frac{1}{3}PL$		$M=-\frac{5}{64}wL^2$
	$M=-\frac{15}{32}PL$		$M=-\frac{17}{256}wL^2$
	$M=-\frac{n^2-1}{8n}PL$		$M=-\frac{wb}{64L}(6L^2-b^2)$
	$M=-\frac{9}{32}PL$		$M=-\frac{37}{576}wL^2$
	$M=-\frac{19}{48}PL$		$M=-\frac{Pab}{2L^2}(2L-a)$
	$M=-\frac{n^2+0.5}{8n}PL$		$M=-\frac{wa^2}{8L^2}(4L^2-4aL+a^2)$
	$M=-\frac{1}{8}wL^2$		$M=-\frac{wb^2}{8L^2}(2L^2-b^2)$
	$M=-\frac{wb}{16L}(3L^2-b^2)$		

I-11

一端固定梁固端弯矩