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tze-dtu@ukr.net

ó ; (, , ,), [1 ó 4)

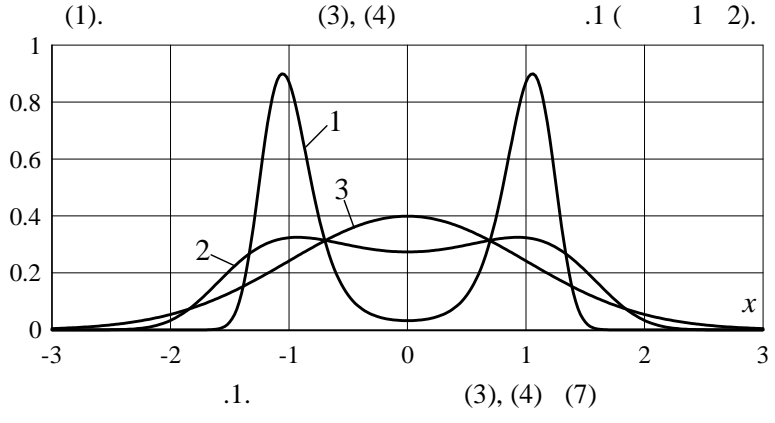
ó m, ó D

m D, m = 0; D = 1. (1)

$$m = \int_{-\infty}^{\infty} xf(x)dx; \quad D = \int_{-\infty}^{\infty} x^2 f(x)dx \quad (2)$$

$$z_{(1)} = \exp(-3,439 + 6x^2 - 2,7x^4); \quad (3)$$

$$z_{(2)} = \exp(-1,296 + 0,4x^2 - 2,232x^4) \quad (4)$$



$$P(x_a < x < x_b) = \int_{x_a}^{x_b} f(x) dx \tag{1}$$

$$P(x_a < x < x_b) = \int_a^b f(x) dx \tag{5}$$

(3), (4) - , (1),

$$f_1(x) = \frac{1}{\sqrt{2 \cdot D}} \exp\left(-\frac{(x-m)^2}{2D}\right) = \frac{1}{\sqrt{2 \cdot D}} \exp\left(-\frac{1}{2} \ln 2 \cdot D - \frac{m^2}{2D} + \frac{m}{D}x - \frac{1}{2D}x^2\right), \tag{6}$$

(1),

$$f_1 = \frac{1}{\sqrt{2 \cdot 1}} \exp\left(-\frac{(x-0)^2}{2 \cdot 1^2}\right) = \frac{1}{\sqrt{2}} \exp\left(-\frac{1}{2}x^2\right). \tag{7}$$

(7) .1 (3). mi D

[5, 6]

[6]

$$f_r = f_r(x) = \exp(g_r(x)), \tag{8}$$

$$g_r(x) = G_1 + G_2x + G_3x^2 + G_4x^3 + \dots + G_{2r+1}x^{2r} \tag{9}$$

ó

$$G_{2r+1} < 0. \tag{1), (2)}$$

$G_1, G_2, \dots, G_{2r+1}$

(8) (9)

- $-\infty < x < \infty$, $f_r(x) > 0$;
- $-\infty \rightarrow +\infty$, $\lim_{x \rightarrow -\infty} f_r(x) = 0$; $\lim_{x \rightarrow \infty} f_r(x) = 0$;
- $\int_{-\infty}^{\infty} f_r(x) dx = C$,

C

G_1

$$f_r = f_r(x), \tag{8) (9)}$$

$$C = 1.$$

$$G_1, G_2, \dots, G_{2r+1} \tag{8) (9)}$$

$$N \geq 2r$$

$$1 + 2r$$

[5]

$$\begin{aligned} \int_{-\infty}^{\infty} r(x) dx &= 1; \\ \int_{-\infty}^{\infty} x r(x) dx &= \frac{1}{N} \sum_{i=1}^N x_i; \\ \int_{-\infty}^{\infty} x^2 r(x) dx &= \frac{1}{N} \sum_{i=1}^N x_i^2; \\ &\vdots \\ \int_{-\infty}^{\infty} x^{2r} r(x) dx &= \frac{1}{N} \sum_{i=1}^N x_i^{2r}, \end{aligned} \tag{10}$$

x_i ($i=1, \dots, N$) ó

$$(8), (9) \quad \begin{matrix} r=1, & \emptyset & \emptyset \\ r>1 & & \end{matrix}$$

$$r=1 \quad (r=1)$$

$$f_1 = \exp(G_1 + G_2 x + G_3 x^2); \quad (G_3 < 0). \tag{11}$$

(6) (11), (10),

$$G_1 = -\frac{1}{2} \ln 2 D - \frac{m^2}{2D}; \quad G_2 = \frac{m}{D}; \quad G_3 = \frac{1}{2D} \tag{12}$$

$$m = \frac{G_2}{2G_3}; \quad D = \frac{1}{2G_3}. \tag{13}$$

$m \in D,$

$$f_2 = \exp(G_1 + G_2 x + G_3 x^2 + G_4 x^3 + G_5 x^4) \quad (G_5 < 0), \tag{14}$$

(14), (10), G_1, \dots, G_5 ,

$$f_r = f_r(x_1, \dots, x_M) = \exp(g_r(x_1, \dots, x_M)), \tag{15}$$

$$g_r(x_1, \dots, x_M) = G_1 + G_2x_1 + \dots + G_{M+1}x_M + G_{M+2}x_1^2 + G_{M+3}x_1x_2 + \dots + G_Px_M^{2r} \quad (16)$$

ó

$$r \text{ ó } \dots G_1, G_2, \dots, G_P \dots$$

- $\mp \infty$;
- \emptyset x_1, \dots, x_M .

$$P = \frac{(M+1+2r)!}{M!(1+2r)!} \quad (17)$$

(r=1) , M=2 x_1, x_2 -

$$1 = {}_1(x_1, x_2) = \exp(G_1 + G_2x_1 + G_3x_2 + G_4x_1^2 + G_5x_1x_2 + G_6x_2^2); (G_4 < 0; G_5 < 0, G_6 < 0). \quad (18)$$

M=2 - (r=2)

$$2 = {}_2(x_1, x_2) = \exp(G_1 + G_2x_1 + G_3x_2 + G_4x_1^2 + G_5x_1x_2 + G_6x_2^2 + G_7x_1^3 + G_8x_1^2x_2 + G_9x_1x_2^2 + G_{10}x_2^3 + G_{11}x_1^4 + G_{12}x_1^3x_2 + G_{13}x_1^2x_2^2 + G_{14}x_1x_2^3 + G_{15}x_2^4). (G_{11} < 0; \dots ; G_{15} < 0) \quad (19)$$

$$N \geq P-1 \quad G_1, \dots, G_P \quad (15) (16)$$

[6]. $r=1$, ($r > 1$) . \emptyset (15), (16)

$$i = m_i = \int_{-\infty}^{\infty} dx_1 \dots \int_{-\infty}^{\infty} dx_M x_i {}_r(x_1, \dots, x_M); \quad (i = 1, \dots, M); \quad (18)$$

$$ij = \int_{-\infty}^{\infty} dx_1 \dots \int_{-\infty}^{\infty} dx_M x_i x_j {}_r(x_1, \dots, x_M); \quad (i, j = 1, \dots, M); \quad (19)$$

$$ijk = \int_{-\infty}^{\infty} dx_1 \dots \int_{-\infty}^{\infty} dx_M x_i x_j x_k {}_r(x_1, \dots, x_M); \quad (i, j, k = 1, \dots, M). \quad (21)$$

$$N > (15 - 20)r.$$

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