[illegible] 539.3

[illegible]
[illegible]

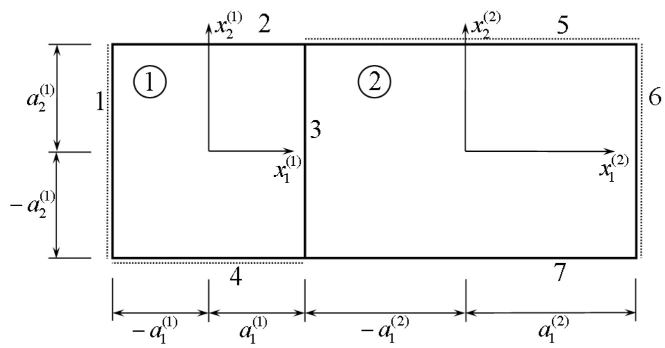
[illegible]

[illegible] Maple [illegible].

[illegible]

[illegible]

[illegible] $2a_2$ [illegible] h [illegible] $2a_1^{(1)}$ [illegible] $2a_1^{(2)}$, [illegible] 1. [illegible] $Ox_1^k x_2^k x_3^k$, [illegible] $k=1,2$, [illegible] Ox_3^k [illegible] Ox_1^k [illegible] Ox_1^k, $k=1,2$, [illegible] $q^{(k)}(x_1,x_2)$, $k=1,2$, [illegible].



[illegible] 1 [illegible]

[illegible] [6]. [illegible]

[illegible] [1]. [illegible] [7] [illegible] [3] [illegible] [2].

[illegible]. [illegible]

[illegible] 1, 4, 5, 6 [illegible] 2 і 7 [illegible] 3 [illegible].

[illegible]:

$\rightarrow$ [illegible] 1: $w^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)=0;\ M_{11}^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)=0;$

$\rightarrow$ [illegible] 4: $w^{(1)}\left(x_1^{(1)}, -a_2^{(1)}\right)=0;\ M_{22}^{(1)}\left(x_1^{(1)}, -a_2^{(1)}\right)=0;$

$\rightarrow$ [illegible] 2: $M_{22}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)=0;\ V_2\left(x_1^{(1)}, a_2^{(1)}\right)=0;$

$\rightarrow$ [illegible] 5: $w^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)=0;\ M_{22}^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)=0;$

$\rightarrow$ [illegible] 6: $w^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)=0;\ M_{11}^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)=0;$

$\rightarrow$ [illegible] 7: $M_{22}^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)=0;\ V_2^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)=0;$ (1)

$\rightarrow$ [illegible] 3:

$$w^{(1)}\left(a_1^{(1)}, x_2^{(1)}\right)=w^{(2)}\left(-a_1^{(2)}, x_2^{(2)}\right);\ M_{11}^{(1)}\left(a_1^{(1)}, x_2^{(1)}\right)=M_{11}^{(2)}\left(-a_1^{(2)}, x_2^{(2)}\right);$$

$$u_1^{(1)}\left(a_1^{(1)}, x_2^{(1)}\right)=u_1^{(2)}\left(-a_1^{(2)}, x_2^{(2)}\right);\ Q_1^{(1)}\left(a_1^{(1)}, x_2^{(1)}\right)=Q_1^{(2)}\left(-a_1^{(2)}, x_2^{(2)}\right). \quad (2)$$

[illegible] (1), (2) [illegible]:

$$w^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)=\left[\mathrm{W}^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{\mathrm{W}_*^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)\right\}=0,$$

$$M_{11}^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)=\left[X_{11}^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{X_{11*}^{(1)}\left(-a_1^{(1)}, x_2^{(1)}\right)\right\}=0,$$

$$M_{22}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)=\left[\mathrm{X}_{22}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{\mathrm{X}_{22*}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)\right\}=0,$$

$$V_2^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)=\left[H_{22}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{H_{22*}^{(1)}\left(x_1^{(1)}, a_2^{(1)}\right)\right\}=0,$$

$$w^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)=\left[\mathrm{W}^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)\right]\left\{\mathrm{R}^{(2)}\right\}+\left\{\mathrm{W}_*^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)\right\}=0,$$

$$M_{22}^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)=\left[\mathrm{X}_{22}^{(2)}\left(x_1^{(2)}, a_2^{(1)}\right)\right]\left\{\mathrm{R}^{(2)}\right\}+\left\{\mathrm{X}_{22*}^{(2)}\left(x_1^{(2)}, a_2^{(2)}\right)\right\}=0,$$

$$w^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)=\left[\mathrm{W}^{(1)}\left(a_1^{(2)}, x_2^{(2)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{\mathrm{W}_*^{(1)}\left(a_1^{(2)}, x_2^{(2)}\right)\right\}=0,$$

$$M_{11}^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)=\left[X_{11}^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)\right]\left\{\mathrm{R}^{(2)}\right\}+\left\{X_{11*}^{(2)}\left(a_1^{(2)}, x_2^{(2)}\right)\right\}=0,$$

$$M_{22}^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)=\left[\mathrm{X}_{22}^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)\right]\left\{\mathrm{R}^{(2)}\right\}+\left\{\mathrm{X}_{22*}^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)\right\}=0,$$

$$V_2^{(1)}\left(x_1^{(2)}, -a_2^{(2)}\right)=\left[H_{22}^{(1)}\left(x_1^{(2)}, -a_2^{(2)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{H_{22*}^{(2)}\left(x_1^{(2)}, -a_2^{(2)}\right)\right\}=0,$$

$$w^{(1)}\left(x_1^{(2)}, -a_2^{(1)}\right)=\left[\mathrm{W}^{(1)}\left(x_1^{(1)}, -a_2^{(1)}\right)\right]\left\{\mathrm{R}^{(1)}\right\}+\left\{\mathrm{W}_*^{(1)}\left(x_1^{(1)}, -a_2^{(1)}\right)\right\}=0,$$

$$M_{22}^{(1)}\left(x_1^{(1)},-a_2^{(1)}\right)=\left[X_{22}^{(1)}\left(x_1^{(1)},-a_2^{(1)}\right)\right]\left\{R^{(1)}\right\}+\left\{X_{22*}^{(1)}\left(x_1^{(1)},-a_2^{(1)}\right)\right\}=0\,. \qquad (3)$$

[illegible] $Z(x_1, x_2)$ [illegible] ([illegible]) [illegible] ([illegible]) [illegible]

$$Z(x_1,x_2)=[Z]\{R\}+Z_*(x_1,x_2)\,. \qquad (4)$$

[illegible] 3 [illegible]

$$Z^{(1)}\Big|_3\left(a_1^{(1)},x_2^{(1)}\right)=Z^{(2)}\Big|_3\left(-a_1^{(2)},x_2^{(2)}\right). \qquad (5)$$

[illegible] $\{R\}$ [illegible]

$$\{R\}=\left\{\left\{R^{(1)}\right\},\ \left\{R^{(2)}\right\}\right\}^T, \qquad (6)$$

[illegible] T [illegible].

[illegible] (4) [illegible] $Z(x_1, x_2)$ [illegible]

$$\left[Z^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right]\{R\}^{(1)}+\left\{Z_*^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right\}=\left[Z^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right]\{R\}^{(2)}+\left\{Z_*^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right\}. \qquad (7)$$

[illegible]:

$$\left[\left[Z^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right]\ \left[-Z^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right]\right]\begin{Bmatrix}\{R\}^{(1)}\\ \{R\}^{(2)}\end{Bmatrix}+\left\{\left\{Z_*^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right\}-\left\{Z_*^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right\}\right\}=0 \qquad (8)$$

[illegible]

$$Z(x_2)\Big|_3=\left[\left[Z^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right]\ \left[-Z^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right]\right],\qquad \{R\}=\begin{Bmatrix}\{R\}^{(1)}\\ \{R\}^{(2)}\end{Bmatrix},$$

$$Z_*(x_2)\Big|_3=\left\{\left\{Z_*^{(1)}\left(a_1^{(1)},x_2^{(1)}\right)\right\}-\left\{Z_*^{(2)}\left(-a_1^{(2)},x_2^{(2)}\right)\right\}\right\}. \qquad (9)$$

[illegible] K [illegible]

$$\left(Z_*^{(1)}(x_1,x_2)\Big|_K=Z_{*p}^{(1)}(x_1,x_2)\right). \qquad (10)$$

[illegible] (4), [illegible]

$$\left[Z^{(1)}(x_1,x_2)\right]_K\left\{R^{(1)}\right\}+\left\{Z_*^{(1)}(x_1,x_2)\right\}_K=\left\{Z_{*p}^{(1)}(x_1,x_2)\right\}_K. \qquad (11)$$

[illegible] (9). [illegible]:

$$\left[Z(x_1,x_2)\right]_K=\left[\left[Z(x_1,x_2)\right]_K\ \left[-O(x_1,x_2)\right]_K\right]. \qquad (12)$$

[illegible] $[M]$, [illegible] $\{P\}$ [illegible]

$$[M]\{R\}+\{P\}=0\,. \qquad (13)$$

[illegible]. [illegible] ([illegible] 1), [illegible] $2a_1^{(1)}=4m$, $2a_2^{(1)}=4m$, $2a_1^{(2)}=6m$, $2a_2^{(2)}=4m$ [illegible] $h=0.2m$ [illegible] $q^{(1)}=100k\,N/m^2$, $q^{(2)}=200k\,N/m^2$. [illegible] 15, $E_b=2.3\cdot10^4\,MN/m^2$, $v_b=0.2$, [illegible] $E_s=2\cdot10^5\,MN/m^2$, [illegible]

... $S^{(1)} = 0.1\%$, ... $S^{(2)} = 0.5\%$ . ... $0.03m$.

... [3]:

$$D_{11}^{(1)} = D_{22}^{(1)} = 1.6 \cdot 10^7 \; N/m^2 \; ; \; D_{11}^{(2)} = D_{22}^{(2)} = 1.7 \cdot 10^7 \; N/m^2 \; ;$$

$$D_{12}^{(1)} = 3.2 \cdot 10^6 \; N/m^2 ; \; D_{12}^{(2)} = 3.4 \cdot 10^6 \; N/m^2 ;$$

$$D_{66}^{(1)} = 6.4 \cdot 10^6 \; N/m^2 ; \; D_{66}^{(2)} = 6.8 \cdot 10^6 \; N/m^2 ;$$

... [5] ... $K_0 = 5 \cdot 10^7 \; N/m^3$.

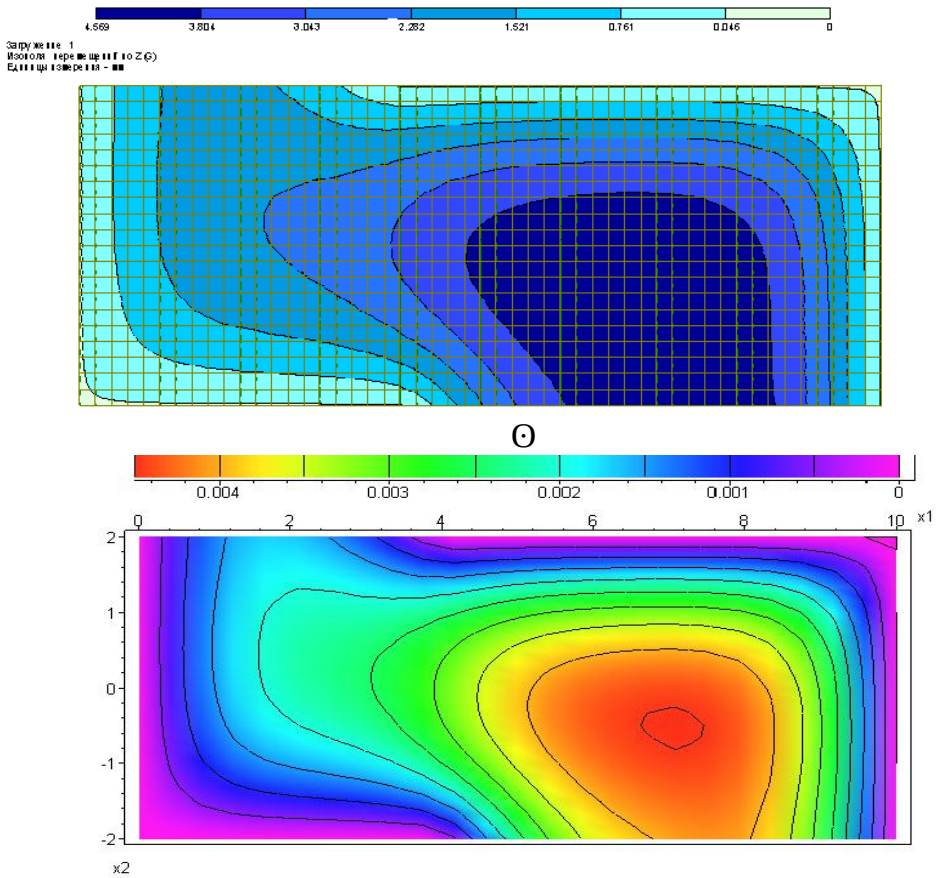
... $x_1^{(k)} = \pm a_1^{(k)}$ ... $x_2^{(k)} = \pm a_2^{(k)}$, ... [2]:

$$x_{ij}^{(k)} = \frac{k^* \left(x_{2j}^{(k)} - x_{1j}^{(k)} \right)}{K_* + 1} + x_{1j}^{(k)} , \qquad (14)$$

... K_* ... k^* ... a_j , $j = 1,2$; $x_{ij}^{(k)}$ ...

... Maple ...

... 1071 ... 1000 ...



...

υ lsΘʁdɑʃɥ' 1 tʃʦʜΘdʦs ʟdʑΘɥȷ dɑdźʷ tʃtɑtsgɑʃɑdʦ ' tʃȷ tɛȷ dʒ'ʰ ȷ dź dźdźʔ fɲȷsɑʃ‰ƶ ʜɔʦ⊐ tʃdɑʃls.

ʊΘʁdɑʃɥʷ 1

t ȷ ʟƶdź lsΘȷsɑʃ ɥɑʃfɲɣʦs ɔtgʦ tɑʦʟtɛΘ⊐ƶdʑƶ tʃtɑtsgɑʃɑdźɔ ' tʃȷ tɛȷ dʒ'ʰ ȷ dź.
ʃ ‰ [lsΘʃ ʉ [dʑΘdźdź' fɲȷsɑʃ‰ƶ ʜɔʦ⊐ tʃdɑʃls

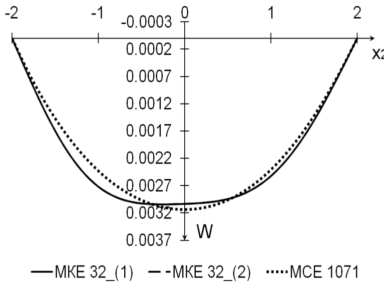
	ʃ ‰ [			ʃ ʉ [		
lʦsvɥ‰ɑʃ tʃʦ tsfɲȷ⊐$_2$	W(1) (dʒ)	U1(1) (dʒ)	U2(1) (dʒ)	W(1) (dʒ)	U1(1) (dʒ)	U2(1) (dʒ)
-2	0.0000E+00	-3.770E-14	-3.680E-04	0.0000E+00	-7.147E-05	-7.147E-05
-1.8	7.2637E-04	-5.585E-05	-3.536E-04	6.5672E-04	-9.031E-05	-9.031E-05
-1.6	1.3970E-03	-1.041E-04	-3.132E-04	1.2195E-03	-9.861E-05	-9.861E-05
-1.4	1.9667E-03	-1.377E-04	-2.541E-04	1.6988E-03	-1.005E-04	-1.005E-04
-1.2	2.4081E-03	-1.528E-04	-1.868E-04	2.1012E-03	-9.998E-05	-9.998E-05
-1	2.7154E-03	-1.498E-04	-1.218E-04	2.4310E-03	-9.848E-05	-9.848E-05
-0.8	2.9028E-03	-1.330E-04	-6.794E-05	2.6926E-03	-9.659E-05	-9.659E-05
-0.6	2.9979E-03	-1.092E-04	-2.993E-05	2.8907E-03	-9.448E-05	-9.448E-05
-0.4	3.0334E-03	-8.574E-05	-7.987E-06	3.0293E-03	-9.215E-05	-9.215E-05
-0.2	3.0380E-03	-6.843E-05	1.858E-06	3.1115E-03	-8.941E-05	-8.941E-05
0	3.0296E-03	-6.036E-05	6.259E-06	3.1389E-03	-8.605E-05	-8.605E-05
0.2	3.0116E-03	-6.123E-05	1.263E-05	3.1115E-03	-8.174E-05	-8.174E-05
0.4	2.9735E-03	-6.787E-05	2.720E-05	3.0280E-03	-7.616E-05	-7.616E-05
0.6	2.8948E-03	-7.523E-05	5.359E-05	2.8854E-03	-6.894E-05	-6.894E-05
0.8	2.7510E-03	-7.781E-05	9.212E-05	2.6801E-03	-5.974E-05	-5.974E-05
1	2.5201E-03	-7.094E-05	1.400E-04	2.4081E-03	-4.828E-05	-4.828E-05
1.2	2.1883E-03	-5.179E-05	1.920E-04	2.0659E-03	-3.437E-05	-3.437E-05
1.4	1.7536E-03	-1.966E-05	2.417E-04	1.6518E-03	-1.810E-05	-1.810E-05
1.6	1.2272E-03	2.393E-05	2.828E-04	1.1667E-03	-6.777E-08	-6.777E-08
1.8	6.3200E-04	7.586E-05	3.097E-04	6.1397E-04	1.768E-05	1.768E-05
2	0.0000E+00	1.320E-04	3.191E-04	0.0000E+00	3.218E-05	3.218E-05

ɻtɛGʷ'ʕɥ dʑΘ tɛɑʃfɲɣdźɛ⊐ 3-8 ɔ'ʜʃtsɔ'ʜΟʸ lsˡ tʃȷ tɛȷ tɛ'ʟƶ tʃdɑʃlsɑʃ tʃdɑʦsʰ ɥdɑʦsˣ $x_1^{(1)} = 2$ ΘʁtsΘ ($x_1^{(2)} = -3$), lʦsʁlʦs dʑΘdźdź' fɲȷsɑʃ‰ƶ ʜɔʦ⊐ tʃdɑʃls.

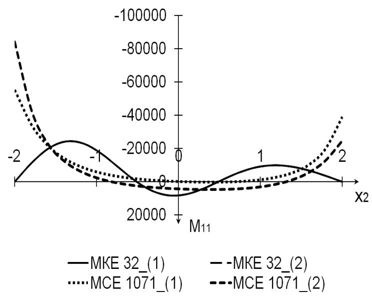
ı Θtɛɑʃfɲɣdźɛ‰ƶ 3 ï tʃtsʜΘdʦs tʃȷ tɛȷ tɛ'ʟ tʃtsɔȷ tɛ⊐dź tʃtɑtsgɑʃɑdʦ tʃdɑʃlsɑʃ, tʦlʦtɛɑʃdʒΘdź ʃ ‰ [lsΘʃ ʉ [(dʑΘtɛɑʃfɲɣdźɛ‰ƶ ʟtsʁtɛΘɥȷ dź tɛ'ʟdɑɥɑʃdʒɑʃʰ lʦtɛɑʃ⊐tsɔɥɑʃdʒɑʃ dźdźʷdʒɑʃ, 'dɑɥȷ ʕfɲ1 ɥɑʃ 2 ɔʕΘ‰ƶ' dɑʦsdʒȷ tɛ tʃdɑʃlsɑʃ).

ı Θtɛɑʃfɲɣdźɛ⊐ 4,5 ï tʃtsʜΘdʦs tʃȷ tɛȷ dʒ'ʰ ȷ dźdźʷ u_1 ' u_2 lʦsvɥtsʕ dɑʃɥ dź tsʾ tʃtsɔȷ tɛ⊐dź tʃdɑʃlsɑʃ, ΘdʑΘtɛɑʃfɲɣdźɛ⊐ 6-8 ï tʃtsʜΘdʦs ɑtɛGʷ'ʕɥ ʟdʒ'dɑʃ ʟGɑʃdʑΘdźdɑʃ⊐ M_{11}, M_{22} lsΘʕtɛźlsɑʃdź dʦsɑʃtsdʒsdȷ dʦsɔ M_{12}.

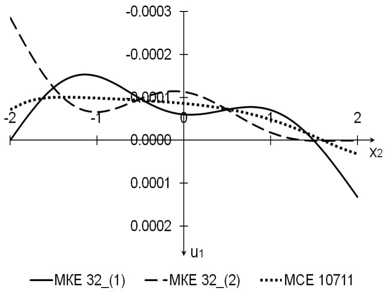
ş tɛɑʃɔ' ʜdźʷ tʃtɑtsgɑʃɑdźɛ ' tʃȷ tɛȷ dʒ'ʰ ȷ dź tslʦtɛɑʃdʒΘdź tɛ'ʟdɑɥɑʃdʒɑʃ dʒȷ lʦtsʜΘdʦsɑʃ tʃɲtɛGʕlsɑʃɥdʦs fɲɣ'ɔtʃΘʜΘʸ lsˡ, Θʜdźʷdʒsdȷ dʦs'ɔ tɛ'ʟdɑɥɑʃɥʷ fɲɣdʦls'ɔΘ .I 'ʜdʦsfɲɣdźΟ dʒGʕfɲɣɑʃdʒΘdźdźΟ tɛ'ʟdɑɥɑʃɥʷ tɛȷ ʟźdźlsΘʦs'ɔ fɲȷΘdʦsɔɑʃlsˡ ƶ ɥȷ dʦtɛΘdźdźʔ ɥΘfɲȷsɑʃdź ʜdźʷ tʃtɑtsgɑʃɑdźɛ 2.3%, ʜdźʷ tʃȷ tɛȷ dʒ'ʰ ȷ dźɛ ï 6.5%.



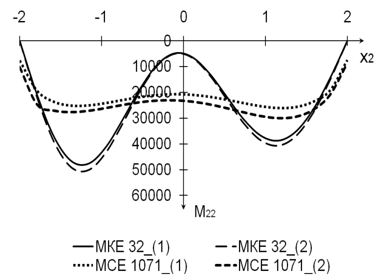
[illegible] 3 [illegible]



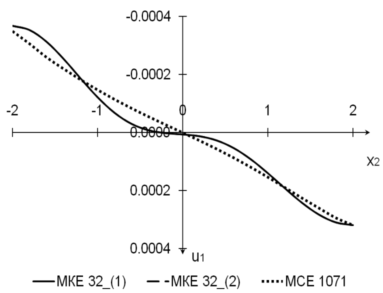
[illegible] 6 [illegible] M_{11} [illegible]



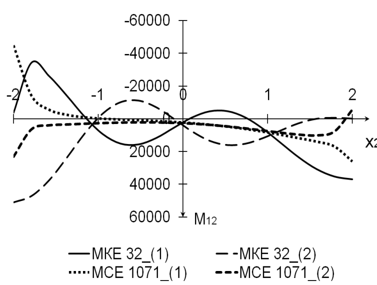
[illegible] 4 [illegible] u_1 [illegible]



[illegible] 7 [illegible] M_{22} [illegible]



[illegible] 5 [illegible] u_2 [illegible]



[illegible] 8 [illegible] M_{12} [illegible]

[illegible]

1. [illegible] // [illegible]. – 2006. – [illegible].18, [illegible] 7. – [illegible]. 82 – 92.
2. [illegible] // [illegible], 2010. – [illegible]. 27. – [illegible]. 105 – 109.
3. [illegible], 1984. – 480 [illegible]
4. [illegible] // [illegible] 8. [illegible] – 2008. – [illegible]. 1. – [illegible]. 43 – 50.
5. [illegible] 2.05.08-85 [illegible] – 1985. – 59 [illegible]
6. [illegible], 1978. – 300 [illegible]
7. [illegible] 1, [illegible], 2004. – [illegible]. 229 – 232.