ELIMINAÇÃO GAUSSIANA: PIVOTAMENTO PARCIAL

$$A_0 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 64 & 38 & -4 & 61 & -31 & -88 & 62 & 39 \\ 59 & -9 & -25 & 79 & -95 & -6 & -35 & -46 \\ 76 & 16 & -61 & 42 & -72 & 0 & -85 & -40 \\ -47 & 54 & 9 & 64 & 84 & -51 & 84 & 63 \\ 93 & 16 & -79 & 85 & 28 & 81 & 12 & 91 \\ 92 & 43 & 18 & 55 & 23 & 0 & 89 & 56 \end{pmatrix}$$

$$A_1 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & -4.666666667 & 60.64646465 & 23.50505051 & -86.5959596 & -60.2020202 & 8.343434343 & 42.23232323 \\ 0 & -48.33333333 & 34.5959596 & 44.43434343 & -146.2525253 & 19.62626263 & -84.46464646 & -43.02020202 \\ 0 & -34.66666667 & 15.76767677 & -2.525252525 & -138.020202 & 33.01010101 & -148.7171717 & -36.16161616 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & -46 & 14.93939394 & 30.51515152 & -52.78787879 & 121.3939394 & -65.96969697 & 95.6969697 \\ 0 & -18.33333333 & 110.9292929 & 1.101010101 & -56.91919192 & 39.95959596 & 11.86868687 & 60.64646465 \end{pmatrix}$$

$$A_2 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & 0 & 12.80362216 & 96.28053977 & -75.54900568 & -20.82315341 & -14.5678267 & -8.681107955 \\ 0 & 0 & 0.1373106061 & 34.66098485 & -87.30871212 & 3.998106061 & -98.5842803 & -11.53219697 \\ 0 & 0 & 58.54237689 & 28.51089015 & -79.76941288 & -64.10748106 & 15.0920928 & 45.54782197 \\ 0 & 0 & -5.800899621 & 79.85842803 & 14.50236742 & 82.89725379 & 0.5527935606 & 128.3783144 \\ 0 & 0 & 102.6632339 & 20.76680871 & -30.10061553 & 24.61671402 & 38.38127367 & 73.67163826 \end{pmatrix}$$

$$A_3 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & 0 & 102.6632339 & 20.76680871 & -30.10061553 & 24.61671402 & 38.38127367 & 73.67163826 \\ 0 & 0 & 0 & 34.63320954 & -87.26845298 & 3.965181558 & -98.63561471 & -11.63073173 \\ 0 & 0 & 7.105427358 \times 10^{-15} & 16.66888697 & -62.60492748 & -78.14484278 & -6.794330444 & 3.537526274 \\ 0 & 0 & -8.881784197 \times 10^{-16} & 81.03183908 & 12.80155748 & 84.28820049 & 2.721495125 & 132.5410683 \\ 0 & 0 & 0 & 93.69061189 & -71.79501418 & -23.89322137 & -19.35453863 & -17.86904977 \end{pmatrix}$$

$$A_4 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & 0 & 102.6632339 & 20.76680871 & -30.10061553 & 24.61671402 & 38.38127367 & 73.67163826 \\ 0 & 0 & 0 & 93.69061189 & -71.79501418 & -23.89322137 & -19.35453863 & -17.86904977 \\ 0 & 0 & 7.105427358 \times 10^{-15} & 0 & -49.83157749 & -73.89390026 & -3.350883867 & 6.716683342 \\ 0 & 0 & -8.881784197 \times 10^{-16} & 0 & 74.89616779 & 104.953149 & 19.46099365 & 147.9957861 \\ 0 & 0 & 0 & 0 & -60.72906211 & 12.79743194 & -91.48111141 & -5.025346916 \end{pmatrix}$$

$$A_5 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & 0 & 102.6632339 & 20.76680871 & -30.10061553 & 24.61671402 & 38.38127367 & 73.67163826 \\ 0 & 0 & 0 & 93.69061189 & -71.79501418 & -23.89322137 & -19.35453863 & -17.86904977 \\ 0 & 0 & -8.881784197 \times 10^{-16} & 0 & 74.89616779 & 104.953149 & 19.46099365 & 147.9957861 \\ 0 & 0 & 6.514484816 \times 10^{-15} & 0 & 0 & -4.064146198 & 9.597335539 & 105.1845182 \\ 0 & 0 & -7.20173595 \times 10^{-16} & 0 & 7.105427358 \times 10^{-15} & 97.89799837 & -75.70129347 & 114.976057 \end{pmatrix}$$

$$A_6 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 0 & 85.33333333 & -38.47474747 & 91.53535354 & 124.8282828 & -71.41414141 & 123.4040404 & 60.62626263 \\ 0 & 0 & 102.6632339 & 20.76680871 & -30.10061553 & 24.61671402 & 38.38127367 & 73.67163826 \\ 0 & 0 & 0 & 93.69061189 & -71.79501418 & -23.89322137 & -19.35453863 & -17.86904977 \\ 0 & 0 & -8.881784197 \times 10^{-16} & 0 & 74.89616779 & 104.953149 & 19.46099365 & 147.9957861 \\ 0 & 0 & -7.20173595 \times 10^{-16} & 0 & 7.105427358 \times 10^{-15} & 97.89799837 & -75.70129347 & 114.976057 \\ 0 & 0 & 6.484587465 \times 10^{-15} & 0 & 2.949753423 \times 10^{-16} & 0 & 6.454665319 & 109.9576445 \end{pmatrix}$$

RETROSUBSTITUIÇÃO

$$x_7 = 17.03537504 \quad x_6 = 14.34734117 \quad x_5 = -22.5556023 \quad x_4 = -10.29700622 \quad x_3 = -13.62175775 \quad x_2 = 25.98068815 \quad x_1 = -13.55447972$$

ELIMINAÇÃO GAUSSIANA: PIVOTAMENTO TOTAL

$$A_0 = \begin{pmatrix} -99 & -66 & 100 & -58 & -86 & 43 & -83 & 5 \\ 64 & 38 & -4 & 61 & -31 & -88 & 62 & 39 \\ 59 & -9 & -25 & 79 & -95 & -6 & -35 & -46 \\ 76 & 16 & -61 & 42 & -72 & 0 & -85 & -40 \\ -47 & 54 & 9 & 64 & 84 & -51 & 84 & 63 \\ 93 & 16 & -79 & 85 & 28 & 81 & 12 & 91 \\ 92 & 43 & 18 & 55 & 23 & 0 & 89 & 56 \end{pmatrix}$$

$$A_1 = \begin{pmatrix} 100 & -66 & -99 & -58 & -86 & 43 & -83 & 5 \\ 0 & 35.36 & 60.04 & 58.68 & -34.44 & -86.28 & 58.68 & 39.2 \\ 0 & -25.5 & 34.25 & 64.5 & -116.5 & 4.75 & -55.75 & -44.75 \\ 0 & -24.26 & 15.61 & 6.62 & -124.46 & 26.23 & -135.63 & -36.95 \\ 0 & 59.94 & -38.09 & 69.22 & 91.74 & -54.87 & 91.47 & 62.55 \\ 0 & -36.14 & 14.79 & 39.18 & -39.94 & 114.97 & -53.57 & 94.95 \\ 0 & 54.88 & 109.82 & 65.44 & 38.48 & -7.74 & 103.94 & 55.1 \end{pmatrix}$$

$$A_2 = \begin{pmatrix} 100 & -83 & -99 & -58 & -86 & 43 & -66 & 5 \\ 0 & -135.63 & 15.61 & 6.62 & -124.46 & 26.23 & -24.26 & -36.95 \\ 0 & 0 & 27.83359139 & 61.77888373 & -65.3413699 & -6.0317039 & -15.52805427 & -29.56189634 \\ 0 & 0 & 66.79362973 & 61.54412741 & -88.28732581 & -74.93165229 & 24.86396815 & 23.21366954 \\ 0 & 0 & -27.56248618 & 73.68458306 & 7.803140898 & -37.18026985 & 43.57885424 & 37.6306127 \\ 0 & 0 & 8.624493106 & 36.56528792 & 9.218167072 & 104.6098946 & -26.55798865 & 109.5442011 \\ 0 & 0 & 121.7827177 & 70.51323454 & -56.89987466 & 12.36135073 & 36.28835803 & 26.78338126 \end{pmatrix}$$

$$A_3 = \begin{pmatrix} 100 & -83 & -99 & -58 & -86 & 43 & -66 & 5 \\ 0 & -135.63 & 15.61 & 6.62 & -124.46 & 26.23 & -24.26 & -36.95 \\ 0 & 0 & 121.7827177 & 70.51323454 & -56.89987466 & 12.36135073 & 36.28835803 & 26.78338126 \\ 0 & 0 & 0 & 22.87004484 & -57.07970266 & -81.71142777 & 4.961052563 & 8.523906622 \\ 0 & 0 & 0 & 89.64349816 & -5.074729119 & -34.38258587 & 51.79182062 & 43.69236423 \\ 0 & 0 & 0 & 31.57163269 & 13.24774193 & 103.7344798 & -29.1278828 & 107.647437 \\ 0 & 0 & 0 & 45.66299639 & -52.33683288 & -8.856905964 & -23.82180357 & -35.68327139 \end{pmatrix}$$

$$A_4 = \begin{pmatrix} 100 & -83 & -99 & 43 & -86 & -58 & -66 & 5 \\ 0 & -135.63 & 15.61 & 26.23 & -124.46 & 6.62 & -24.26 & -36.95 \\ 0 & 0 & 121.7827177 & 12.36135073 & -56.89987466 & 70.51323454 & 36.28835803 & 26.78338126 \\ 0 & 0 & 0 & 103.7344798 & 13.24774193 & 31.57163269 & -29.1278828 & 107.647437 \\ 0 & 0 & 0 & 0 & -0.6837915539 & 100.1078527 & 42.13744213 & 79.37189193 \\ 0 & 0 & 0 & 0 & -46.6444847 & 47.73895234 & -17.98291838 & 93.3175624 \\ 0 & 0 & 0 & 0 & -51.20573351 & 48.35859946 & -26.30875794 & -26.49227502 \end{pmatrix}$$

$$A_5 = \begin{pmatrix} 100 & -83 & -99 & 43 & -58 & -86 & -66 & 5 \\ 0 & -135.63 & 15.61 & 26.23 & 6.62 & -124.46 & -24.26 & -36.95 \\ 0 & 0 & 121.7827177 & 12.36135073 & 70.51323454 & -56.89987466 & 36.28835803 & 26.78338126 \\ 0 & 0 & 0 & 103.7344798 & 31.57163269 & 13.24774193 & -29.1278828 & 107.647437 \\ 0 & 0 & 0 & 0 & 100.1078527 & -0.6837915539 & 42.13744213 & 79.37189193 \\ 0 & 0 & 0 & 0 & 0 & -46.31840147 & -38.07721956 & 55.4670755 \\ 0 & 0 & 0 & 0 & 0 & -50.87541775 & -46.66388126 & -64.83405769 \end{pmatrix}$$

$$A_6 = \begin{pmatrix} 100 & -83 & -99 & 43 & -58 & -86 & -66 & 5 \\ 0 & -135.63 & 15.61 & 26.23 & 6.62 & -124.46 & -24.26 & -36.95 \\ 0 & 0 & 121.7827177 & 12.36135073 & 70.51323454 & -56.89987466 & 36.28835803 & 26.78338126 \\ 0 & 0 & 0 & 103.7344798 & 31.57163269 & 13.24774193 & -29.1278828 & 107.647437 \\ 0 & 0 & 0 & 0 & 100.1078527 & -0.6837915539 & 42.13744213 & 79.37189193 \\ 0 & 0 & 0 & 0 & 0 & -50.87541775 & -46.66388126 & -64.83405769 \\ 0 & 0 & 0 & 0 & 0 & 0 & 4.40688145 & 114.4938127 \end{pmatrix}$$

RETROSUBSTITUIÇÃO

$$x_2 = 25.98068815 \quad x_5 = -22.5556023 \quad x_4 = -10.29700622 \quad x_6 = 14.34734117 \quad x_1 = -13.55447972 \quad x_7 = 17.03537504 \quad x_3 = -13.62175775$$

MÉTODO DE JACOBI

$$C = \begin{pmatrix} 555 & 47 & -34 & -10 & -182 & -13 & 89 \\ 22 & -561 & 133 & 306 & 72 & 12 & 6 \\ 10 & 58 & -631 & -120 & 303 & 10 & -22 \\ -69 & -19 & 9 & -968 & 302 & -126 & 27 \\ -116 & -46 & -10 & -161 & -638 & 22 & -17 \\ 295 & -132 & -39 & 2 & -79 & 568 & -17 \\ 65 & -22 & -213 & -3 & -12 & 86 & -436 \end{pmatrix} \quad \mathbf{d} = \begin{pmatrix} -82 \\ 66 \\ -17 \\ 20 \\ -20 \\ -59 \\ -18 \end{pmatrix}$$

k	$x_{1,k}$	$x_{2,k}$	$x_{3,k}$	$x_{4,k}$	$x_{5,k}$	$x_{6,k}$	$x_{7,k}$
0	0	0	0	0	0	0	0
1	−0.1477477477	−0.1176470588	0.02694136292	−0.02066115702	0.03134796238	−0.1038732394	0.04128440367
2	−0.1352802313	−0.1260807173	0.02968268666	0.01688238914	0.06680327581	−0.04696032891	−0.009176993761
3	−0.1126697418	−0.09923548438	0.04165184237	0.01843060503	0.05893449837	−0.05191844465	0.001759802125
4	−0.118632337	−0.09566569124	0.03994488874	0.01489877082	0.05184726344	−0.05737360469	−0.002843318849
5	−0.1208165732	−0.09930616317	0.03752100132	0.01360843133	0.05352655017	−0.0546754953	−0.003935118061
6	−0.1198910554	−0.1004087281	0.03828435403	0.01395530169	0.05467190384	−0.05434810176	−0.002398053762
7	−0.1196078933	−0.09983181869	0.03863329642	0.01427565721	0.05445395845	−0.05482851772	−0.002546696091
8	−0.1196884869	−0.09960308646	0.03852280232	0.0142377859	0.0542619623	−0.05485344265	−0.002795027947
9	−0.1197390305	−0.09968092997	0.03846582024	0.01417443191	0.05427717028	−0.05480001852	−0.002763976174
10	−0.1197358116	−0.09972755122	0.0384769791	0.01417768963	0.05430986797	−0.05479250313	−0.002729190751
11	−0.1197258009	−0.09971827326	0.03848673267	0.01418867217	0.0543109794	−0.05479866584	−0.002731249842
12	−0.1197252409	−0.09970958906	0.03848616336	0.01418895865	0.05430540835	−0.05480098494	−0.002736312244
13	−0.1197270754	−0.09971036456	0.03848438057	0.01418716558	0.05430467195	−0.0548002241	−0.002736694897
14	−0.1197273136	−0.09971191953	0.03848429299	0.01418695554	0.05430557828	−0.05479968149	−0.002735875634
15	−0.1197270125	−0.09971192751	0.03848460148	0.0141872372	0.05430578495	−0.05479977386	−0.002735706366
16	−0.1197269494	−0.09971166257	0.03848464383	0.01418729999	0.05430564717	−0.05479987809	−0.00273583763
17	−0.1197269947	−0.09971163713	0.03848459401	0.0141872576	0.05430559999	−0.0547998697	−0.002735879476
18	−0.1197270092	−0.09971168016	0.03848458262	0.01418724289	0.05430561927	−0.05479985135	−0.002735859927

k	$ER_{1,k}$	$ER_{2,k}$	$ER_{3,k}$	$ER_{4,k}$	$ER_{5,k}$	$ER_{6,k}$	$ER_{7,k}$
0	–	–	–	–	–	–	–
1	1	1	1	1	1	1	1
2	0.09216066802	0.06689094601	0.09235429975	2.223828977	0.530742138	1.211935944	5.498684945
3	0.2006793407	0.2705205004	0.2873619756	0.08400244543	0.1335173397	0.09549815626	6.214787293
4	0.05026112891	0.03731529136	0.04273271686	0.2370554087	0.1366944842	0.09508135444	1.618925354
5	0.0180789455	0.03665907348	0.0646008194	0.09481912119	0.03137296776	0.04934768996	0.2774501794
6	0.007719656361	0.01098076824	0.01993902555	0.0248558126	0.02094958447	0.006024010581	0.6409632362
7	0.002367420521	0.005778813446	0.009032167104	0.02244068443	0.00400237925	0.008762154779	0.05836673233
8	0.0006733613679	0.002296437162	0.002868277726	0.00265991579	0.003538319274	0.0004543913039	0.08884771856
9	0.0004221149108	0.0007809267872	0.001481369077	0.004469595971	0.0002801910838	0.0009748924596	0.01123445762
10	$2.688309593 \times 10^{-5}$	0.0004674861461	0.0002900138302	0.0002297774328	0.0006020579628	0.000137161038	0.01274569142
11	$8.36137854 \times 10^{-5}$	$9.304169674 \times 10^{-5}$	0.0002534269073	0.0007740358648	$2.046425592 \times 10^{-5}$	0.0001124610279	0.0007539006294
12	$4.677491833 \times 10^{-6}$	$8.709491172 \times 10^{-5}$	$1.479276332 \times 10^{-5}$	$2.019090677 \times 10^{-5}$	0.0001025874038	$4.231865985 \times 10^{-5}$	0.001850081947
13	$1.532276303 \times 10^{-5}$	$7.777478761 \times 10^{-6}$	$4.632507141 \times 10^{-5}$	0.0001263873414	$1.356059564 \times 10^{-5}$	$1.388397281 \times 10^{-5}$	0.0001398231284
14	$1.989141327 \times 10^{-6}$	$1.559466034 \times 10^{-5}$	$2.275542739 \times 10^{-6}$	$1.480515509 \times 10^{-5}$	$1.668942214 \times 10^{-5}$	$9.901718043 \times 10^{-6}$	0.0002994517285
15	$2.51468875 \times 10^{-6}$	$8.002108135 \times 10^{-8}$	$8.015832157 \times 10^{-6}$	$1.985338319 \times 10^{-5}$	$3.805712438 \times 10^{-6}$	$1.68567351 \times 10^{-6}$	$6.187378404 \times 10^{-5}$
16	$5.271569316 \times 10^{-7}$	$2.657023546 \times 10^{-6}$	$1.100413896 \times 10^{-6}$	$4.425603296 \times 10^{-6}$	$2.537029668 \times 10^{-6}$	$1.901875591 \times 10^{-6}$	$4.797963659 \times 10^{-5}$
17	$3.782128864 \times 10^{-7}$	$2.552068994 \times 10^{-7}$	$1.294579241 \times 10^{-6}$	2.9874713×10^{-6}	$8.688219217 \times 10^{-7}$	$1.530217034 \times 10^{-7}$	$1.529511274 \times 10^{-5}$
18	1.2141157×10^{-7}	$4.315384291 \times 10^{-7}$	$2.957721816 \times 10^{-7}$	$1.037099943 \times 10^{-6}$	$3.550115086 \times 10^{-7}$	$3.347740763 \times 10^{-7}$	$7.145378948 \times 10^{-6}$

MÉTODO DE GAUSS SEIDEL

$$C = \begin{pmatrix} 555 & 47 & -34 & -10 & -182 & -13 & 89 \\ 22 & -561 & 133 & 306 & 72 & 12 & 6 \\ 10 & 58 & -631 & -120 & 303 & 10 & -22 \\ -69 & -19 & 9 & -968 & 302 & -126 & 27 \\ -116 & -46 & -10 & -161 & -638 & 22 & -17 \\ 295 & -132 & -39 & 2 & -79 & 568 & -17 \\ 65 & -22 & -213 & -3 & -12 & 86 & -436 \end{pmatrix} \quad \mathbf{d} = \begin{pmatrix} -82 \\ 66 \\ -17 \\ 20 \\ -20 \\ -59 \\ -18 \end{pmatrix}$$

k	$x_{1,k}$	$x_{2,k}$	$x_{3,k}$	$x_{4,k}$	$x_{5,k}$	$x_{6,k}$	$x_{7,k}$
0	0	0	0	0	0	0	0
1	−0.1477477477	−0.1234410881	0.01325346975	−0.00758341271	0.06881727828	−0.04531693824	0.008231186903
2	−0.1164332184	−0.1152565343	0.04798443451	0.01794485582	0.05376518018	−0.05923095151	−0.006986418696
3	−0.1173603097	−0.0955266811	0.03801063073	0.01422160639	0.05353280016	−0.05532383287	−0.002444966832
4	−0.1204221741	−0.09993985129	0.03805651903	0.01407251069	0.05445831671	−0.05449087536	−0.00256132054
5	−0.1197066495	−0.09984688166	0.03856643954	0.01420150186	0.05431279763	−0.05483005297	−0.002772236403
6	−0.1197028019	−0.09968366887	0.0384890734	0.01419017136	0.05429832653	−0.05480771905	−0.002737220909
7	−0.1197314047	−0.09971031756	0.03848050963	0.01418620846	0.0543064198	−0.05479745715	−0.002734128095
8	−0.1197273456	−0.09971305893	0.03848501673	0.01418729033	0.05430580722	−0.05479988938	−0.002736056821
9	−0.1197267664	−0.09971152886	0.03848469535	0.0141872877	0.05430556482	−0.05479994811	−0.002735895572
10	−0.1197270224	−0.09971164716	0.03848455797	0.01418724351	0.05430562688	−0.05479983844	−0.002735840428
11	−0.1197270075	−0.09971169235	0.03848459207	0.01418725028	0.0543056275	−0.05479985262	−0.00273585545

k	$ER_{1,k}$	$ER_{2,k}$	$ER_{3,k}$	$ER_{4,k}$	$ER_{5,k}$	$ER_{6,k}$	$ER_{7,k}$
0	–	–	–	–	–	–	–
1	1	1	1	1	1	1	1
2	0.2689484136	0.07101162587	0.7237964794	1.422595355	0.2799599675	0.2349111894	2.178169712
3	0.007899530136	0.2065376178	0.2623951139	0.2618023118	0.004340890482	0.07062270333	1.857469723
4	0.02542608497	0.04415826247	0.001205793327	0.01059481898	0.01699495323	0.01528618335	0.0454272341
5	0.005977317522	0.0009311219714	0.01322187145	0.00908292515	0.002679277815	0.006185980051	0.0760814854
6	$3.214218807 \times 10^{-5}$	0.001637307177	0.002010080477	0.0007984753212	0.0002665110699	0.0004074959039	0.01279235239
7	0.0002388910708	0.000267261014	0.0002225481884	0.000279348817	0.0001490297428	0.0001872696685	0.001131188359
8	$3.390301715 \times 10^{-5}$	$2.749266317 \times 10^{-5}$	0.0001171130158	$7.62559292 \times 10^{-5}$	$1.128006452 \times 10^{-5}$	$4.438376786 \times 10^{-5}$	0.0007049291714
9	$4.837653051 \times 10^{-6}$	$1.534502377 \times 10^{-5}$	$8.350710449 \times 10^{-6}$	$1.849963595 \times 10^{-7}$	$4.463728996 \times 10^{-6}$	$1.071750611 \times 10^{-6}$	$5.893838806 \times 10^{-5}$
10	$2.138483436 \times 10^{-6}$	1.1864723×10^{-6}	$3.569905043 \times 10^{-6}$	$3.114686685 \times 10^{-6}$	$1.142867864 \times 10^{-6}$	$2.001151294 \times 10^{-6}$	$2.015594577 \times 10^{-5}$
11	$1.243195403 \times 10^{-7}$	$4.532006461 \times 10^{-7}$	$8.861647558 \times 10^{-7}$	$4.771808122 \times 10^{-7}$	$1.143751467 \times 10^{-8}$	$2.587164423 \times 10^{-7}$	$5.490685869 \times 10^{-6}$