**See table reformatting below for the data. ---**Henry p1 of 2 pages

**From:** Mark Anderson < > (henry - question does a = 2.2 N=1 as a possibility ) ?

Subject: Re: A book that Mr. Pormraning has written on certain equations

**Date:** January 23, 2017 **To:** H Newton **Cc:** Jim LeBlanc , Mike Aertker , "Lawrence D." , Nathan Wallace

**After correcting many typo’s from the OCR process, correctin my errors, I introduced (like telling the program to convert Km to m by using a factor of 10,000), I was able to get the program to not crash nor generate floating point exceptions. Example below: -By Mark -**

It should be noted for the values of GAMMA YIELD etc, taken from page 30 Chapman thesis, ***his solution terminates, where mine is unstable.***

**Still unknown** are the values he used as parameters on **page 30** for alpha, beta, N, and tau0.

**alpha, beta, N, and tau0** are used in equation 61 **page 20.** The one I claim is missing an alpha term in **numerator**. This seems **like a typo** since the code has EXP(A\*(TSHAKE-TO)) **@ FOFT1090**

**F(t) = (1/N) (a+b) exp {{a} (t-t0)}**

**claim {{a}...} is missing on page 20**

              - - - - - - - - - - -

**b + a exp [(a+b) (t-t0)]**

**TSHAKE=1.E8\*T**                                                     FOFT1070

      DENOM=(B+A\*EXP((A+B)\*(TSHAKE-TO)))\*RN                             FOFT1080

      FOFT=(A+B)\*EXP(A\*(TSHAKE-TO))/DENOM                               FOFT1090

I guess my next step is to see if I can revise alpha, beta, N and tau0 and get stability, or find some other constants that got altered in OCR or code editing process.

Additional comments from: Mark

**ubuntu@ip-172-30-1-215:~/FORTRAN\_EMP\_DIR$ ./a.out < IN**

1    **THE BLAST WITH GAMMA YIELD OF 1.000E-03 KILOTCNS**

**IS AT AN ALTITUDE OF 1.000E+02 KILOMETERS.**

**THE TARGET IS AT COORDINATES**      **0.000E+00      0.000E+00      0.000E+00**

**WHICH IS 1.000E+05 METERS FROM THE BURST**

**DIRECT WAVE IS BEING CALCULATED**

               \*\*\*\*\*

               \*\*\*\*\* **SOLUTICN HAS GONE UNSTABLE**

               \*\*\*\*\*

**ITERATION TERMINATED AFTER 16.0 SHAKES**

**PEAK OCCURRED AT 10.0 SHAKES http://www.rapidtables.com/convert/number/index.htm**

     \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

     \* **PEAK EFIELD AT TARGET IS 2.129E+12 VOLTS/METER** \*

     \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

1 TIMES USED (IN SHAKES) ARE:

      0.1          0.2          0.3          0.4          0.5          0.6          0.7          0.8          0.9          1.0

      1.1          1.2          1.3          1.4          1.5          1.6          1.7          1.8          1.9          2.0

      2.1          2.2          2.3          2.4          2.5          2.6          2.7          2.8          2.9          3.0

      3.1          3.2          3.3          3.4          3.5          3.6          3.7          3.8          3.9          4.0

      4.1          4.2          4.3          4.4          4.5          4.6          4.7          4.8          4.9          5.0

      5.1          5.2          5.3          5.4          5.5          5.6          5.7          5.8          5.9          6.0

      6.1          6.2          6.3          6.4          6.5          6.6          6.7          6.8          6.9          7.0

      7.1          7.2          7.3          7.4          7.5          7.6          7.7          7.8          7.9          8.0

      8.1          8.2          8.3          8.4          8.5          8.6          8.7          8.8          8.9          9.0

      9.1          9.2          9.3          9.4          9.5          9.6          9.7          9.8          9.9         ***10.0***

     11.0         12.0         13.0         14.0         15.0         16.0         17.0         18.0         19.0         20.0

     21.0         22.0         23.0         24.0         25.0         26.0         27.0         28.0         29.0         30.0

     31.0         32.0         33.0         34.0         35.0         36.0         37.0         38.0         39.0         40.0

     41.0         42.0         43.0         44.0         45.0         46.0         47.0         48.0         49.0         50.0

     51.0         52.0         53.0         54.0         55.0         56.0         57.0         58.0         59.0         60.0

     61.0         62.0         63.0         64.0         65.0         66.0         67.0         68.0         69.0         70.0

     71.0         72.0         73.0         74.0         75.0         76.0         77.0         78.0         79.0         80.0

     81.0         82.0         83.0         84.0         85.0         86.0         87.0         88.0         89.0         90.0

     91.0         92.0         93.0         94.0         95.0         96.0         97.0         98.0         99.0        100.0

EFIELD VALUES AT TARGET (IN V/M) ARE:

    2.767E-02    6.300E-02    1.148E-01    1.960E-01    3.275E-01    5.425E-01    8.959E-01    1.477E+00    2.434E+00    4.007E+00

    6.589E+00    1.081E+01    1.770E+01    2.882E+01    4.657E+01    7.441E+01    1.170E+02    1.799E+02    2.695E+02    3.916E+02

    5.511E+02    7.507E+02    9.911E+02    1.270E+03    1.585E+03    1.931E+03    2.304E+03    2.700E+03    3.116E+03    3.550E+03

    3.999E+03    4.463E+03    4.941E+03    5.437E+03    5.956E+03    6.503E+03    7.083E+03    7.702E+03    8.362E+03    9.069E+03

    9.827E+03    1.065E+04    1.154E+04    1.251E+04    1.359E+04    1.480E+04    1.615E+04    1.770E+04    1.946E+04    2.149E+04

    2.382E+04    2.653E+04    2.968E+04    3.338E+04    3.777E+04    4.302E+04    4.936E+04    5.707E+04    6.654E+04    7.829E+04

    9.302E+04    1.117E+05    1.356E+05    1.666E+05    2.073E+05    2.611E+05    3.331E+05    4.308E+05    5.647E+05    7.505E+05

    1.011E+06    1.382E+06    1.917E+06    2.695E+06    3.843E+06    5.558E+06    8.150E+06    1.212E+07    1.827E+07    2.791E+07

    4.325E+07    6.793E+07    1.082E+08    1.747E+08    2.859E+08    4.743E+08    7.975E+08    1.359E+09    2.345E+09    4.098E+09

    7.253E+09    1.300E+10    2.358E+10    4.331E+10    8.051E+10    1.515E+11    2.883E+11    5.551E+11    1.081E+12    2.129E+12

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00    0.000E+00

Copy of data/comments made on Jan 1, 2017, by H. Newton <[figgure@yahoo.com](mailto:figgure@yahoo.com)>