Excitation Spectrum [Modeling Base-pressure Curve as a Gaussian Function]

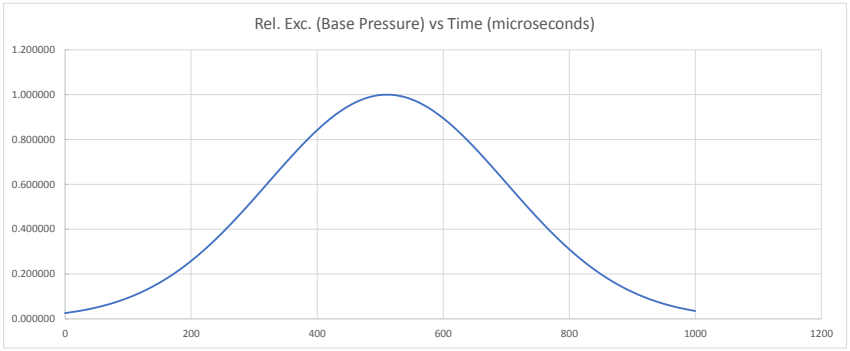
tbe = Time of Bullet Engravement (6,000 psi) = 100 microseconds
tb = Time to Peak Base Pressure (mu-sec) = 511 microseconds
t60 = Time to 60% P-Max (mu-sec) = 322 microseconds
Sigma (time) = tb - t60 = 189 microseconds

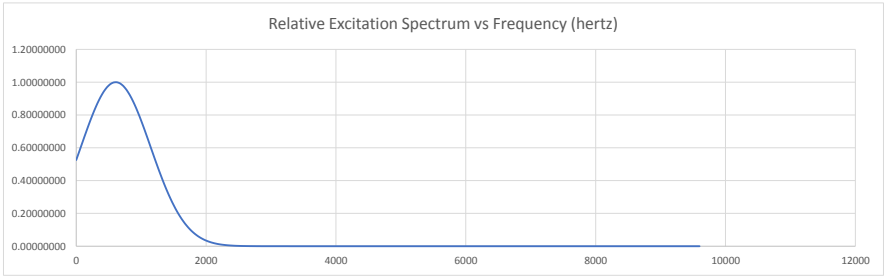
Relative Excitation(time) = EXP{(-0.5)*[t - tb)/Sigma(time)]^2}
Relative Excitation(freq) = EXP{(-0.5)*[f - fp)/Sigma(freq)]^2}

Frequency Domain Function is Fourier Transform of Time Domain Function

fp = Peak Excitation Frequency = 1000000/[4*(tb - tbe)] = 608.27 hertz
Sigma (freq) = 1/[Sigma(time)*(Pi^2)] = 536 hertz

Time (mu-sec)	Rel. Base Pressure	Frequency (Hz)	Relative Excitation
0	0.025861	0	0.52534040
20	0.034235	50	0.58144869
40	0.044816	100	0.63797567
60	0.058014	150	0.69393528
80	0.074261	200	0.74826588
100	0.094001	250	0.79986196
120	0.117663	300	0.84761039
140	0.145641	350	0.89042967
160	0.178264	400	0.92731035
180	0.215765	450	0.95735435
200	0.258247	500	0.97981131
220	0.305651	550	0.99410969
240	0.357729	600	0.99988095
260	0.414017	650	0.99697532
280	0.473827	700	0.98546827
300	0.536238	750	0.96565726
320	0.600113	800	0.93804895
340	0.664117	850	0.90333767
360	0.726764	900	0.86237641
380	0.786464	950	0.81614202
400	0.841591	1000	0.76569663
420	0.890553	1050	0.71214735
440	0.931871	1100	0.65660640
460	0.964248	1150	0.60015370
480	0.986639	1200	0.54380349
500	0.998308	1250	0.48847644
520	0.998867	1300	0.43497809
540	0.988297	1350	0.38398412
560	0.966951	1400	0.33603249
580	0.935531	1450	0.29152205
600	0.895052	1500	0.25071693
620	0.846790	1550	0.21375587
640	0.792209	1600	0.18066523
660	0.732893	1650	0.15137467
680	0.670468	1700	0.12573436
700	0.606531	1750	0.10353254
720	0.542580	1800	0.08451268
740	0.479968	1850	0.06838944
760	0.419853	1900	0.05486284
780	0.363178	1950	0.04363045
800	0.310654	2000	0.03439721
820	0.262768	2050	0.02688307
840	0.219789	2100	0.02082844
860	0.181792	2150	0.01599766
880	0.148689	2200	0.01218088
900	0.120260	2250	0.00919439
920	0.096184	2300	0.00688001
940	0.076071	2350	0.00510361





960	**0.059494**
980	**0.046011**
1000	**0.035187**

2400	**0.00375308**
2450	**0.00273603**
2500	**0.00197731**
2550	**0.00141662**
2600	**0.00100612**
2650	**0.00070839**
2700	**0.00049444**
2750	**0.00034212**
2800	**0.00023468**
2850	**0.00015958**
2900	**0.00010757**
2950	**0.00007189**
3000	**0.00004763**
3050	**0.00003128**
3100	**0.00002036**
3150	**0.00001314**
3200	**0.00000841**
3250	**0.00000533**
3300	**0.00000335**
3350	**0.00000209**
3400	**0.00000129**
3450	**0.00000079**
3500	**0.00000048**
3550	**0.00000029**
3600	**0.00000017**
3650	**0.00000010**
3700	**0.00000006**
3750	**0.00000003**
3800	**0.00000002**
3850	**0.00000001**
3900	**0.00000001**
3950	**0.00000000**
4000	**0.00000000**
4050	**0.00000000**
4100	**0.00000000**
4150	**0.00000000**
4200	**0.00000000**
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5000	**0.00000000**
5050	**0.00000000**
5100	**0.00000000**
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8150	0.00000000
8200	0.00000000
8250	0.00000000
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8500	**0.00000000**
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9000	**0.00000000**
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