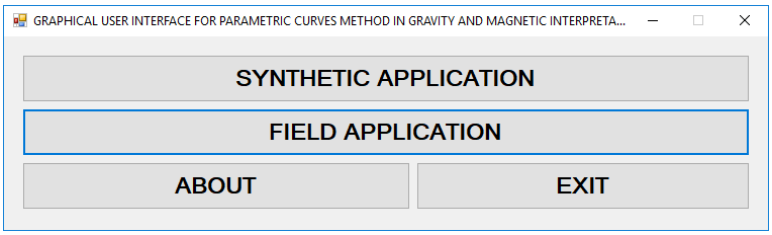
PRMCURV-GUI USER MANUAL

PRMCURV-GUI is a user friendly graphical user interface. This application requires the Windows Operating System and Microsoft .NET Framework 4.5 or later.
This software calculates the depth and shape factor of sources bodies from the residual gravity data and magnetic data, using the parametric curves technique. This software consists of four windows:

- MENU
- SYNTHETIC APPLICATION
- FIELD APPLICATION
- ABOUT

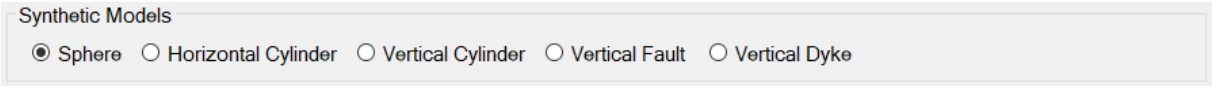
MENU

The program menu window is shown following figure.

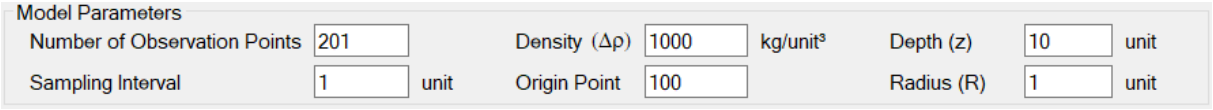


SYNTHETIC APPLICATION

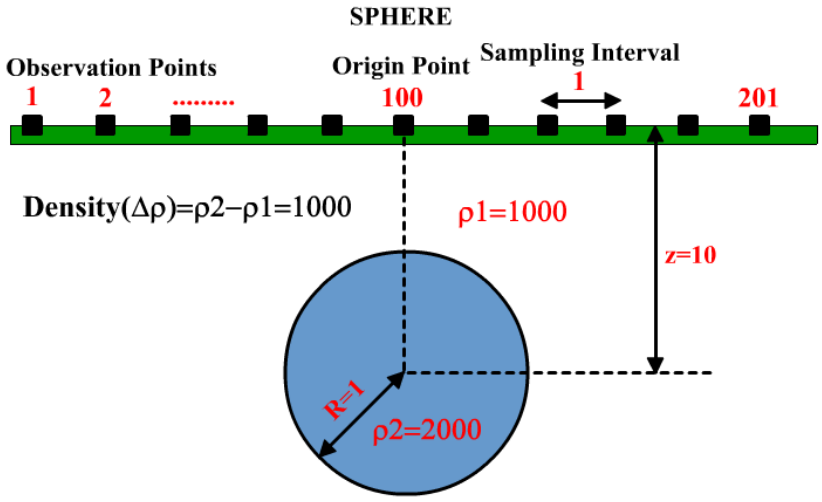
- In this window, a synthetic model should be selected in the synthetic models panel. Five different source model type can be selected.



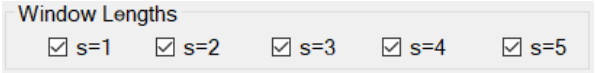
- The model parameters should be entered using the model parameters panel.



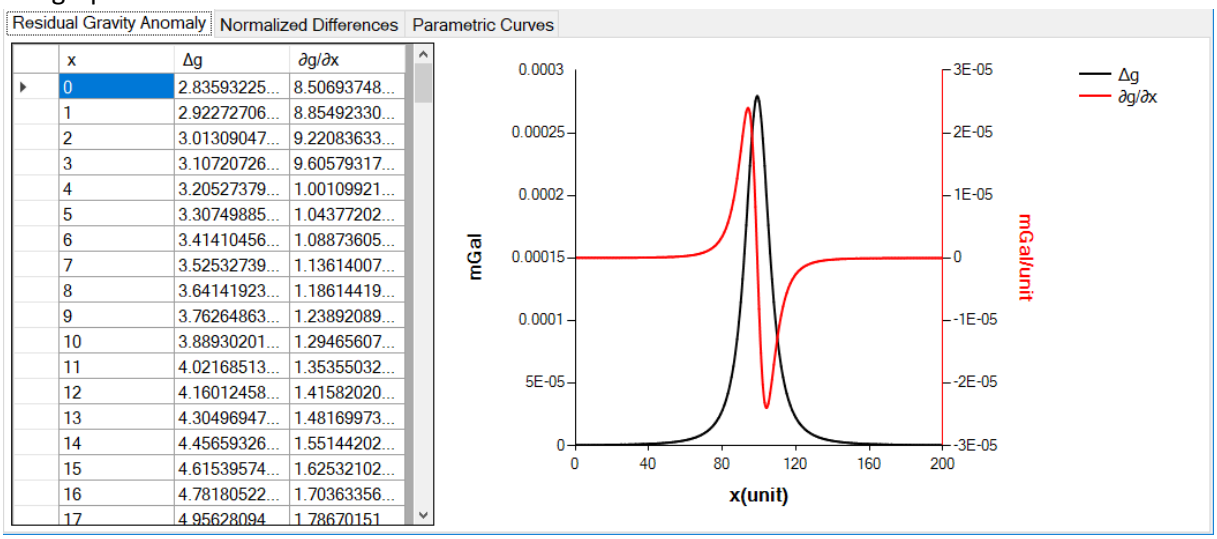
For examples; the model parameters are summarized using the following figure:



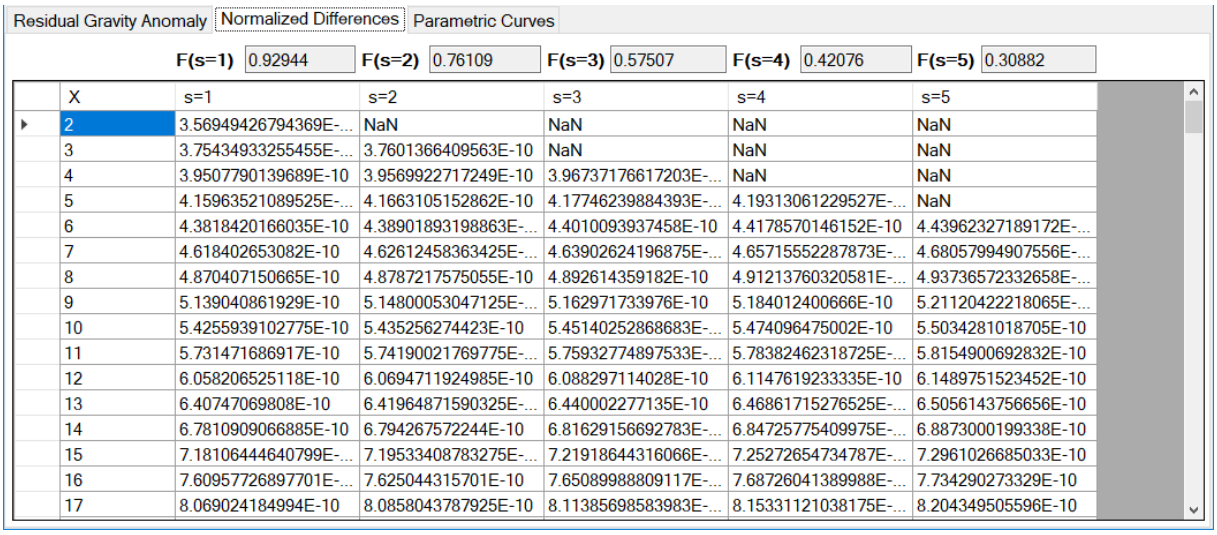
- In the window lengths panel, at least two window lengths (combobox) should be selected.



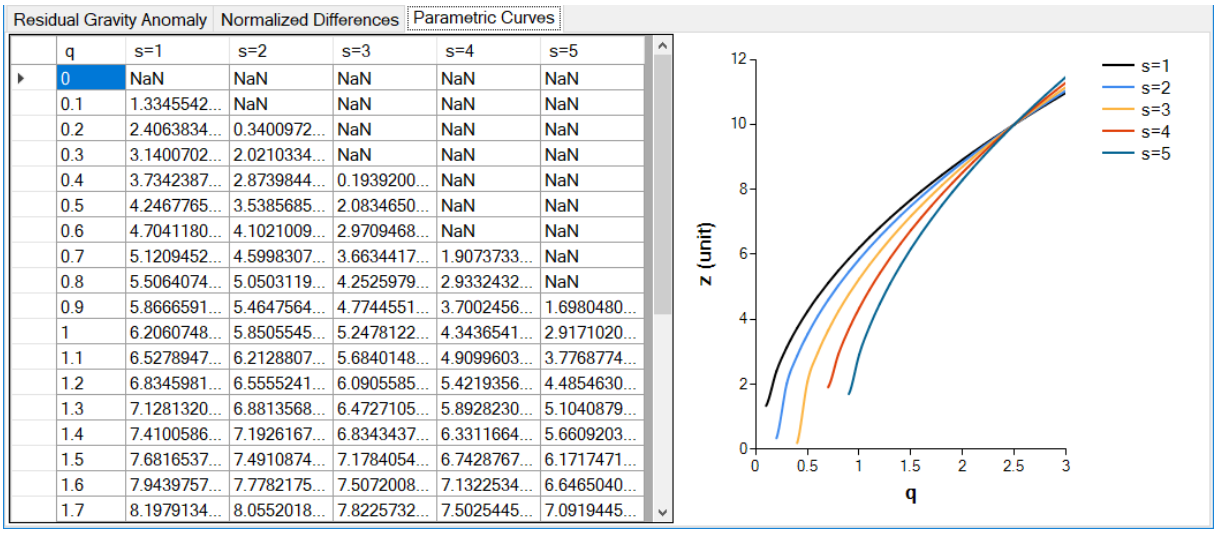
- Click the calculate button and examine the following tabpages to see obtained numerical and graphical results.



x	Δg	∂g/∂x
0	2.83593225...	8.50693748...
1	2.92272706...	8.85492330...
2	3.01309047...	9.22083633...
3	3.10720726...	9.60579317...
4	3.20527379...	1.00109921...
5	3.30749885...	1.04377202...
6	3.41410456...	1.08873605...
7	3.52532739...	1.13614007...
8	3.64141923...	1.18614419...
9	3.76264863...	1.23892089...
10	3.88930201...	1.29465607...
11	4.02168513...	1.35355032...
12	4.16012458...	1.41582020...
13	4.30496947...	1.48169973...
14	4.45659326...	1.55144202...
15	4.61539574...	1.62532102...
16	4.78180522...	1.70363356...
17	4.95628094...	1.78670151...



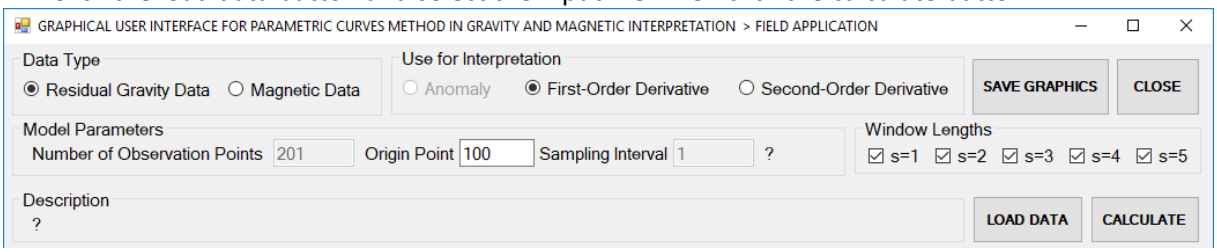
X	s=1	s=2	s=3	s=4	s=5
2	3.56949426794369E-...	NaN	NaN	NaN	NaN
3	3.75434933255455E-...	3.7601366409563E-10	NaN	NaN	NaN
4	3.9507790139689E-10	3.9569922717249E-10	3.96737176617203E-...	NaN	NaN
5	4.15963521089525E-...	4.1663105152862E-10	4.17746239884393E-...	4.19313061229527E-...	NaN
6	4.3818420166035E-10	4.38901893198863E-...	4.4010093937458E-10	4.4178570146152E-10	4.43962327189172E-...
7	4.618402653082E-10	4.62612458363425E-...	4.63902624196875E-...	4.65715552287873E-...	4.68057994907556E-...
8	4.870407150665E-10	4.8787217575055E-10	4.892614359182E-10	4.91213760320581E-...	4.93736572332658E-...
9	5.139040861929E-10	5.14800053047125E-...	5.162971733976E-10	5.184012400666E-10	5.21120422218065E-...
10	5.4255939102775E-10	5.435256274423E-10	5.45140252868683E-...	5.474096475002E-10	5.5034281018705E-10
11	5.731471686917E-10	5.74190021769775E-...	5.75932774897533E-...	5.78382462318725E-...	5.8154900692832E-10
12	6.058206525118E-10	6.0694711924985E-10	6.088297114028E-10	6.1147619233335E-10	6.1489751523452E-10
13	6.40747069808E-10	6.41964871590325E-...	6.440002277135E-10	6.46861715276525E-...	6.5056143756656E-10
14	6.7810909066885E-10	6.794267572244E-10	6.81629156692783E-...	6.84725775409975E-...	6.8873000199338E-10
15	7.18106444640799E-...	7.19533408783275E-...	7.21918644316066E-...	7.25272654734787E-...	7.2961026685033E-10
16	7.60957726897701E-...	7.625044315701E-10	7.65089988809117E-...	7.68726041389988E-...	7.734290273329E-10
17	8.069024184994E-10	8.0858043787925E-10	8.11385698583983E-...	8.15331121038175E-...	8.204349505596E-10



q	s=1	s=2	s=3	s=4	s=5
0	NaN	NaN	NaN	NaN	NaN
0.1	1.3345542...	NaN	NaN	NaN	NaN
0.2	2.4063834...	0.3400972...	NaN	NaN	NaN
0.3	3.1400702...	2.0210334...	NaN	NaN	NaN
0.4	3.7342387...	2.8739844...	0.1939200...	NaN	NaN
0.5	4.2467765...	3.5385685...	2.0834650...	NaN	NaN
0.6	4.7041180...	4.1021009...	2.9709468...	NaN	NaN
0.7	5.1209452...	4.5998307...	3.6634417...	1.9073733...	NaN
0.8	5.5064074...	5.0503119...	4.2525979...	2.9332432...	NaN
0.9	5.8666591...	5.4647564...	4.7744551...	3.7002456...	1.6980480...
1	6.2060748...	5.8505545...	5.2478122...	4.3436541...	2.9171020...
1.1	6.5278947...	6.2128807...	5.6840148...	4.9099603...	3.7768774...
1.2	6.8345981...	6.5555241...	6.0905585...	5.4219356...	4.4854630...
1.3	7.1281320...	6.8813568...	6.4727105...	5.8928230...	5.1040879...
1.4	7.4100586...	7.1926167...	6.8343437...	6.3311664...	5.6609203...
1.5	7.6816537...	7.4910874...	7.1784054...	6.7428767...	6.1717471...
1.6	7.9439757...	7.7782175...	7.5072008...	7.1322534...	6.6465040...
1.7	8.1979134...	8.0552018...	7.8225732...	7.5025445...	7.0919445...

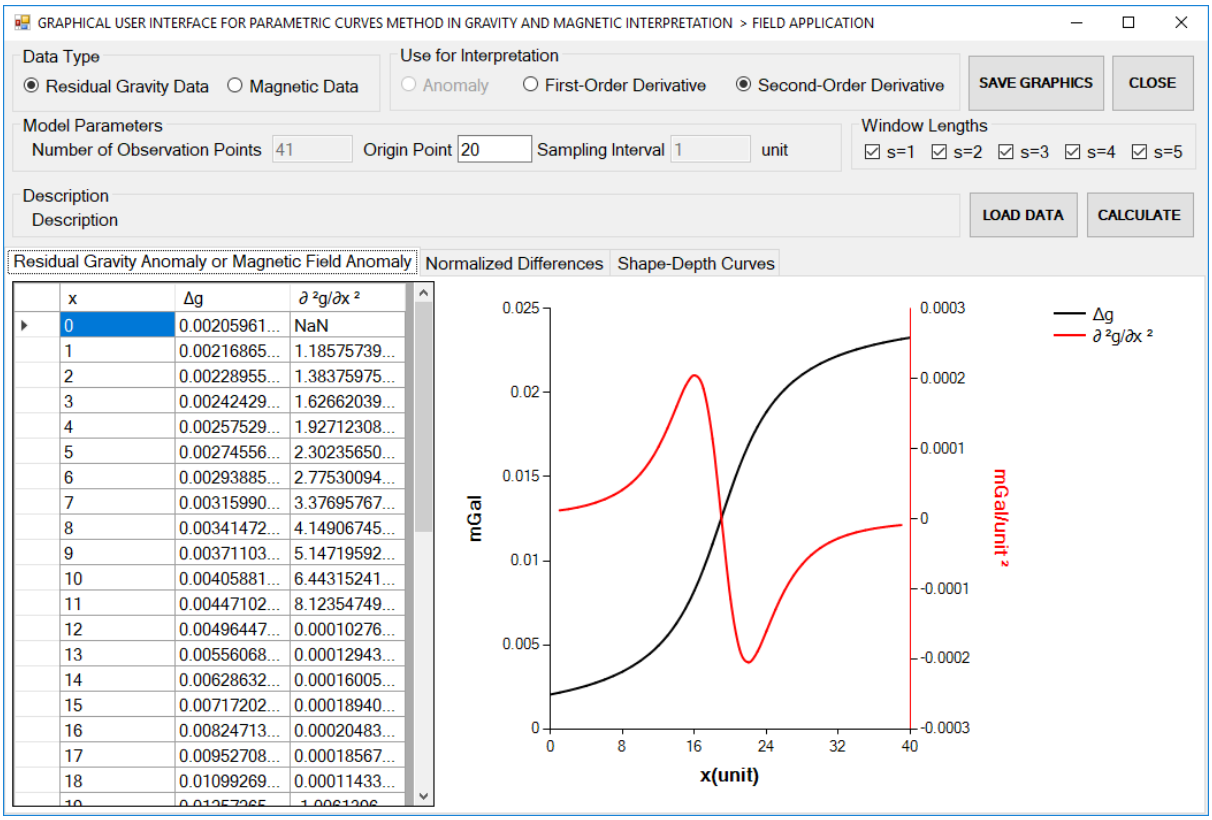
FIELD APPLICATION

- In this window, both residual gravity data and magnetic data can be interpreted.
- Firstly, the type of data (gravity or magnetic) should be selected in the data type panel.
- To interpret the residual gravity data, the first-order or second-order derivative radiobuttons can be used. The anomaly radiobutton is selected automatically when the magnetic data is selected in the data type panel.
- Click the load data button and select the input file. Then click the calculate button.



- The origin point can be changed and obtained the best parametric curves.

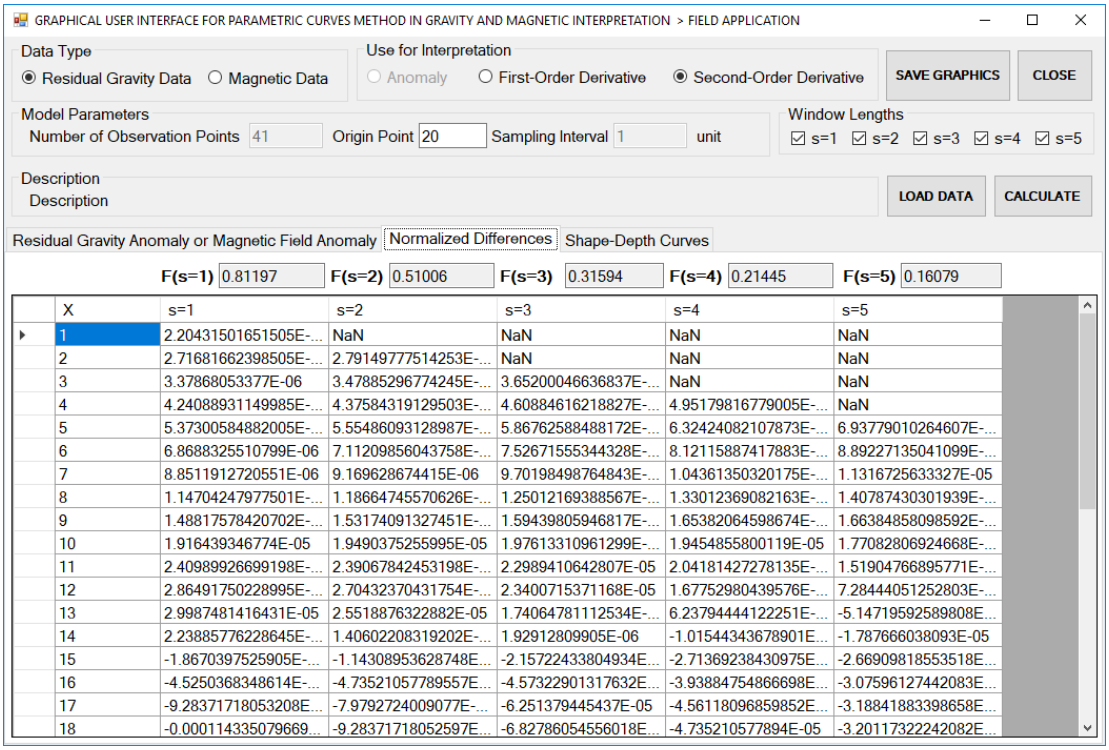
For example;



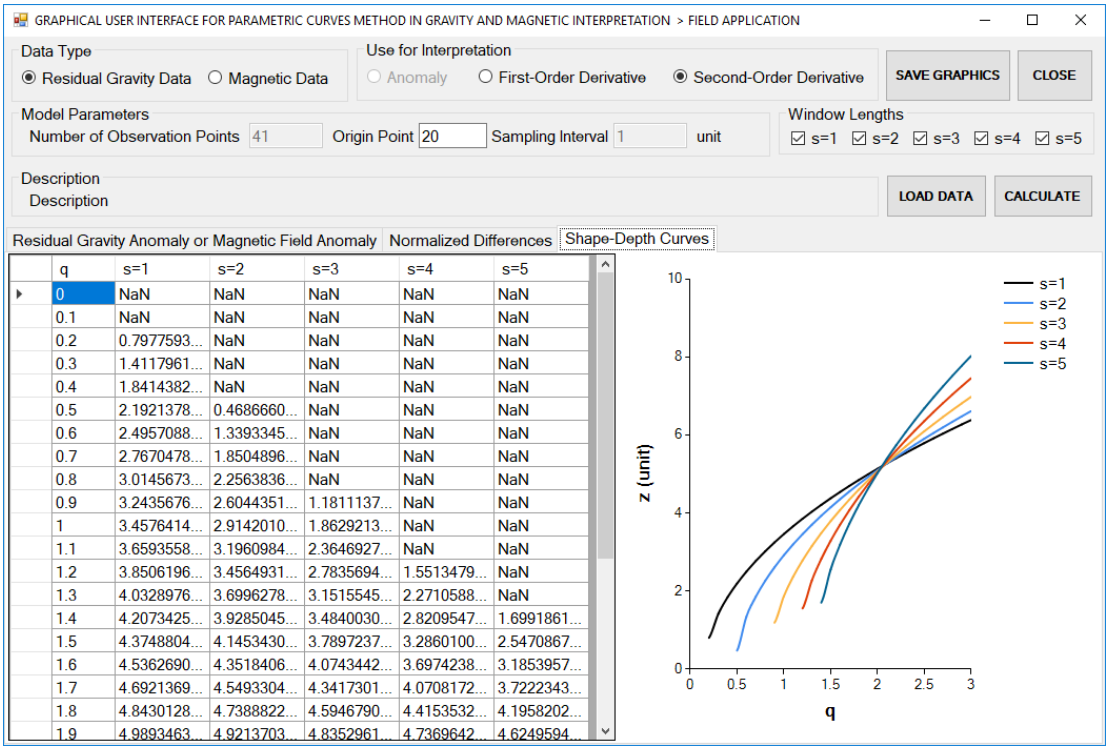
- The Input file (*.txt) has a format and is as follows;

  Number of Observation Points:
  65
  Origin Point:
  19
  Sampling Interval:
  0.25
  Unit:
  km

Description:
Field Data-AA' Profile
Data:
-2
-2.47778729818715
-2.99876182748585
-3.55814053422479
-4.15114036473265



X	s=1	s=2	s=3	s=4	s=5
1	2.20431501651505E-...	NaN	NaN	NaN	NaN
2	2.71681662398505E-...	2.79149777514253E-...	NaN	NaN	NaN
3	3.37868053377E-06	3.47885296774245E-...	3.65200046636837E-...	NaN	NaN
4	4.24088931149985E-...	4.37584319129503E-...	4.60884616218827E-...	4.95179816779005E-...	NaN
5	5.37300584882005E-...	5.55486093128987E-...	5.86762588488172E-...	6.32424082107873E-...	6.93779010264607E-...
6	6.8688325510799E-06	7.11209856043758E-...	7.52671555344328E-...	8.12115887417883E-...	8.89227135041099E-...
7	8.8511912720551E-06	9.169628674415E-06	9.70198498764843E-...	1.04361350320175E-...	1.1316725633327E-05
8	1.14704247977501E-...	1.18664745570626E-...	1.25012169388567E-...	1.33012369082163E-...	1.40787430301939E-...
9	1.48817578420702E-...	1.53174091327451E-...	1.59439805946817E-...	1.65382064598674E-...	1.66384858098592E-...
10	1.916439346774E-05	1.9490375255995E-05	1.97613310961299E-...	1.9454855800119E-05	1.77082806924668E-...
11	2.40989926699198E-...	2.39067842453198E-...	2.2989410642807E-05	2.04181427278135E-...	1.51904766895771E-...
12	2.86491750228995E-...	2.70432370431754E-...	2.34007153711168E-05	1.67752980439576E-...	7.28444051252803E-...
13	2.9987481416431E-05	2.5518876322882E-05	1.74064781112534E-...	6.23794444122251E-...	-5.14719592589808E...
14	2.23885776228645E-...	1.40602208319202E-...	1.92912809905E-06	-1.01544343678901E...	-1.787666038093E-05
15	-1.8670397525905E-...	-1.14308953628748E...	-2.15722433804934E...	-2.71369238430975E...	-2.66909818553518E...
16	-4.5250368348614E-...	-4.73521057789557E...	-4.57322901317632E...	-3.93884754866698E...	-3.07596127442083E...
17	-9.28371718053208E...	-7.9792724009077E-...	-6.251379445437E-05	-4.56118096859852E...	-3.18841883398658E...
18	-0.000114335079669...	-9.28371718052597E...	-6.82786054556018E...	-4.735210577894E-05	-3.20117322242082E...



q	s=1	s=2	s=3	s=4	s=5
0	NaN	NaN	NaN	NaN	NaN
0.1	NaN	NaN	NaN	NaN	NaN
0.2	0.7977593...	NaN	NaN	NaN	NaN
0.3	1.4117961...	NaN	NaN	NaN	NaN
0.4	1.8414382...	NaN	NaN	NaN	NaN
0.5	2.1921378...	0.4686660...	NaN	NaN	NaN
0.6	2.4957088...	1.3393345...	NaN	NaN	NaN
0.7	2.7670478...	1.8504896...	NaN	NaN	NaN
0.8	3.0145673...	2.2563836...	NaN	NaN	NaN
0.9	3.2435676...	2.6044351...	1.1811137...	NaN	NaN
1	3.4576414...	2.9142010...	1.8629213...	NaN	NaN
1.1	3.6593558...	3.1960984...	2.3646927...	NaN	NaN
1.2	3.8506196...	3.4564931...	2.7835694...	1.5513479...	NaN
1.3	4.0328976...	3.6996278...	3.1515545...	2.2710588...	NaN
1.4	4.2073425...	3.9285045...	3.4840030...	2.8209547...	1.6991861...
1.5	4.3748804...	4.1453430...	3.7897237...	3.2860100...	2.5470867...
1.6	4.5362690...	4.3518406...	4.0743442...	3.6974238...	3.1853957...
1.7	4.6921369...	4.5493304...	4.3417301...	4.0708172...	3.7222343...
1.8	4.8430128...	4.7388822...	4.5946790...	4.4153532...	4.1958202...
1.9	4.9893463...	4.9213703...	4.8352961...	4.7369642...	4.6249594...