

Supplementary material

Table 1: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P5.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	9.9407E-14	1.03112E-11	3.54293E-50	2.09866E-30	3.84494E-31
15	1.82485E-13	1.1029E-11	3.94233E-34	2.52295E-25	8.13844E-26
20	3.02771E-13	1.12098E-11	4.33437E-26	8.3839E-23	3.58856E-23
25	5.912E-13	1.30875E-11	2.96643E-21	2.66316E-21	1.35075E-21
30	1.2531E-12	1.64516E-11	5.04379E-18	2.6268E-20	1.49189E-20
35	4.30042E-12	3.56114E-11	1.03565E-15	1.33139E-19	8.19779E-20
40	1.20584E-11	6.74987E-11	5.66529E-14	4.4585E-19	2.91655E-19
45	3.91847E-11	1.62608E-10	1.28186E-12	1.13401E-18	7.7751E-19
50	1.19896E-10	3.73689E-10	1.56235E-11	2.38153E-18	1.69519E-18
55	3.614E-10	8.82731E-10	1.21366E-10	4.3546E-18	3.19567E-18
60	1.38293E-09	2.6617E-09	6.72262E-10	7.18175E-18	5.40522E-18
65	4.56706E-09	7.56352E-09	2.86992E-09	1.0947E-17	8.41556E-18
70	1.31743E-08	1.97311E-08	9.98235E-09	1.56925E-17	1.22825E-17
75	3.37264E-08	4.7058E-08	2.94674E-08	2.14255E-17	1.70299E-17
80	7.79276E-08	1.03217E-07	7.61188E-08	2.81274E-17	2.26559E-17
90	3.23933E-07	3.99771E-07	3.71851E-07	4.42815E-17	3.6448E-17
100	1.0366E-06	1.22281E-06	1.32917E-06	6.37632E-17	5.33684E-17
110	2.97949E-06	3.11547E-06	3.78368E-06	8.61413E-17	7.30541E-17
120	6.37077E-06	6.88206E-06	9.07673E-06	1.11017E-16	9.51483E-17
10	9.9407E-14	1.03112E-11	3.54293E-50	2.09866E-30	3.84494E-31
15	1.82485E-13	1.1029E-11	3.94233E-34	2.52295E-25	8.13844E-26

20	3.02771E-13	1.12098E-11	4.33437E-26	8.3839E-23	3.58856E-23
25	5.912E-13	1.30875E-11	2.96643E-21	2.66316E-21	1.35075E-21
30	1.2531E-12	1.64516E-11	5.04379E-18	2.6268E-20	1.49189E-20
35	4.30042E-12	3.56114E-11	1.03565E-15	1.33139E-19	8.19779E-20

Table 2: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P8.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	4.74E-17	1.35083E-13	6.78099E-69	2.23438E-37	9.07622E-36
15	1.148E-16	1.4041E-13	1.24073E-46	5.66742E-30	5.81341E-29
20	4.0206E-16	1.45848E-13	1.74973E-35	2.7356E-26	1.41009E-25
25	2.00091E-15	1.54867E-13	8.7751E-29	4.32793E-24	1.47626E-23
30	6.58963E-15	1.73371E-13	2.61318E-24	1.24493E-22	3.22469E-22
35	1.67937E-14	2.51929E-13	4.14793E-21	1.35518E-21	2.88372E-21
40	4.85155E-14	4.83829E-13	1.05209E-18	8.04907E-21	1.47797E-20
45	1.48503E-13	1.1011E-12	7.85029E-17	3.19545E-20	5.23184E-20
50	4.41707E-13	2.55356E-12	2.48565E-15	9.57542E-20	1.43039E-19
55	1.4807E-12	6.99209E-12	4.21725E-14	2.33978E-19	3.24275E-19
60	4.7722E-12	1.8307E-11	4.4795E-13	4.90821E-19	6.39099E-19
65	1.79901E-11	5.48732E-11	3.31781E-12	9.1591E-19	1.13142E-18
70	5.75937E-11	1.38784E-10	1.85075E-11	1.55952E-18	1.8417E-18
75	1.81969E-10	3.51141E-10	8.22742E-11	2.46839E-18	2.80401E-18
80	5.16107E-10	8.24215E-10	3.04103E-10	3.68281E-18	4.04454E-18
90	3.46972E-09	4.84919E-09	2.69963E-09	7.14827E-18	7.42491E-18
100	1.66076E-08	2.14362E-08	1.55637E-08	1.21122E-17	1.20421E-17
110	6.32215E-08	7.50979E-08	6.55181E-08	1.86137E-17	1.78692E-17
120	1.98215E-07	2.18104E-07	2.17785E-07	2.66093E-17	2.48289E-17
10	4.74E-17	1.35083E-13	6.78099E-69	2.23438E-37	9.07622E-36
15	1.148E-16	1.4041E-13	1.24073E-46	5.66742E-30	5.81341E-29

20	4.0206E-16	1.45848E-13	1.74973E-35	2.7356E-26	1.41009E-25
25	2.00091E-15	1.54867E-13	8.7751E-29	4.32793E-24	1.47626E-23
30	6.58963E-15	1.73371E-13	2.61318E-24	1.24493E-22	3.22469E-22
35	1.67937E-14	2.51929E-13	4.14793E-21	1.35518E-21	2.88372E-21

Table 3: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P9.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	5.15131E-12	1.28675E-10	5.81938E-34	4.15065E-35	2.24861E-35
15	6.81527E-12	1.33539E-10	2.72292E-23	1.84512E-28	1.22619E-28
20	9.2844E-12	1.38035E-10	6.13578E-18	3.72849E-25	2.7443E-25
25	1.62126E-11	1.68315E-10	1.0233E-14	3.49836E-23	2.73769E-23
30	4.55062E-11	3.07799E-10	1.46197E-12	7.10337E-22	5.7907E-22
35	2.20375E-10	8.96084E-10	5.11687E-11	6.02937E-21	5.06074E-21
40	1.5351E-09	3.61698E-09	7.42381E-10	2.97161E-20	2.54941E-20
45	8.41177E-09	1.39837E-08	5.98217E-09	1.02039E-19	8.90442E-20
50	3.54328E-08	5.06938E-08	3.19167E-08	2.72271E-19	2.40853E-19
55	1.19642E-07	1.56742E-07	1.26103E-07	6.05098E-19	5.4126E-19
60	3.36882E-07	4.1703E-07	3.97589E-07	1.173E-18	1.059E-18
65	8.20913E-07	9.76726E-07	1.0535E-06	2.04785E-18	1.8633E-18
70	1.77833E-06	2.05664E-06	2.4345E-06	3.29398E-18	3.01716E-18
75	3.50079E-06	3.96296E-06	5.04159E-06	4.96393E-18	4.57294E-18
80	6.36584E-06	7.08017E-06	9.54936E-06	7.0965E-18	6.5702E-18
90	0.0000174	0.0000189	2.78086E-05	1.28379E-17	1.19837E-17
100	0.0000395	0.0000421	6.56965E-05	2.05833E-17	1.93375E-17
110	0.00008	0.0000817	0.000133238	3.0265E-17	2.85792E-17
120	0.00014	0.000143	0.000240909	4.17421E-17	3.95805E-17
10	5.15131E-12	1.28675E-10	5.81938E-34	4.15065E-35	2.24861E-35
15	6.81527E-12	1.33539E-10	2.72292E-23	1.84512E-28	1.22619E-28

20	9.2844E-12	1.38035E-10	6.13578E-18	3.72849E-25	2.7443E-25
25	1.62126E-11	1.68315E-10	1.0233E-14	3.49836E-23	2.73769E-23
30	4.55062E-11	3.07799E-10	1.46197E-12	7.10337E-22	5.7907E-22
35	2.20375E-10	8.96084E-10	5.11687E-11	6.02937E-21	5.06074E-21

Table 4: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P10.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	3.45371E-10	6.4362E-09	2.32291E-27	1.04172E-29	6.88312E-30
15	6.13581E-10	7.1694E-09	7.11103E-19	7.34146E-25	5.56935E-25
20	9.5932E-10	6.6022E-09	1.29561E-14	1.86789E-22	1.51834E-22
25	1.58257E-09	7.0236E-09	4.77648E-12	5.05499E-21	4.28285E-21
30	2.90086E-09	9.29617E-09	2.49427E-10	4.4808E-20	3.9027E-20
35	6.45861E-09	1.50841E-08	4.25316E-09	2.10417E-19	1.8692E-19
40	1.50079E-08	2.75841E-08	3.59786E-08	6.65397E-19	5.99894E-19
45	3.32481E-08	5.0268E-08	1.90542E-07	1.61857E-18	1.47607E-18
50	6.74529E-08	9.2308E-08	7.26562E-07	3.27984E-18	3.01851E-18
55	1.61642E-07	2.06742E-07	2.18063E-06	5.82428E-18	5.40017E-18
60	4.06882E-07	4.9703E-07	5.46704E-06	9.37444E-18	8.7453E-18
65	8.20913E-07	9.66726E-07	1.19314E-05	1.39984E-17	1.31262E-17
70	1.77833E-06	2.05664E-06	2.33461E-05	1.97174E-17	1.85692E-17
75	3.50079E-06	3.96296E-06	4.18529E-05	2.65166E-17	2.50651E-17
80	6.36584E-06	7.08017E-06	6.98698E-05	3.43568E-17	3.25797E-17
90	0.0000174	0.000018823	0.000164826	5.29346E-17	5.04563E-17
100	0.0000395	0.000041803	0.000328958	7.49521E-17	7.17261E-17
110	0.00008	0.0000817	0.000581077	9.99151E-17	9.59108E-17
120	0.00014	0.00014665	0.000936285	1.27393E-16	1.22588E-16
10	3.45371E-10	6.4362E-09	2.32291E-27	1.04172E-29	6.88312E-30
15	6.13581E-10	7.1694E-09	7.11103E-19	7.34146E-25	5.56935E-25

20	9.5932E-10	6.6022E-09	1.29561E-14	1.86789E-22	1.51834E-22
25	1.58257E-09	7.0236E-09	4.77648E-12	5.05499E-21	4.28285E-21
30	2.90086E-09	9.29617E-09	2.49427E-10	4.4808E-20	3.9027E-20
35	6.45861E-09	1.50841E-08	4.25316E-09	2.10417E-19	1.8692E-19

Table 5: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P11.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	4.56065E-10	1.40608E-08	5.81938E-34	2.09866E-30	3.84494E-31
15	6.3515E-10	1.48737E-08	2.72292E-23	2.52295E-25	8.13844E-26
20	8.9834E-10	1.55556E-08	6.13578E-18	8.3839E-23	3.58856E-23
25	1.37872E-09	1.68035E-08	1.0233E-14	2.66316E-21	1.35075E-21
30	2.29774E-09	1.88923E-08	1.46197E-12	2.6268E-20	1.49189E-20
35	4.17265E-09	2.33378E-08	5.11687E-11	1.33139E-19	8.19779E-20
40	9.34747E-09	3.5879E-08	7.42381E-10	4.4585E-19	2.91655E-19
45	2.66229E-08	7.11109E-08	5.98217E-09	1.13401E-18	7.7751E-19
50	8.01936E-08	1.63896E-07	3.19167E-08	2.38153E-18	1.69519E-18
55	0.00000023	3.84391E-07	1.26103E-07	4.3546E-18	3.19567E-18
60	5.79331E-07	8.60089E-07	3.97589E-07	7.18175E-18	5.40522E-18
65	1.30182E-06	1.78874E-06	1.0535E-06	1.0947E-17	8.41556E-18
70	2.65167E-06	3.45171E-06	2.4345E-06	1.56925E-17	1.22825E-17
75	4.97271E-06	6.21867E-06	5.04159E-06	2.14255E-17	1.70299E-17
80	8.70348E-06	0.0000106	9.54936E-06	2.81274E-17	2.26559E-17
90	0.0000225	0.0000261	2.78086E-05	4.42815E-17	3.6448E-17
100	0.0000488	0.0000551	6.56965E-05	6.37632E-17	5.33684E-17
110	0.0000955	0.000103	0.000133238	8.61413E-17	7.30541E-17
120	0.000164	0.000174	0.000240909	1.11017E-16	9.51483E-17
10	4.56065E-10	1.40608E-08	5.81938E-34	2.09866E-30	3.84494E-31
15	6.3515E-10	1.48737E-08	2.72292E-23	2.52295E-25	8.13844E-26

20	8.9834E-10	1.55556E-08	6.13578E-18	8.3839E-23	3.58856E-23
25	1.37872E-09	1.68035E-08	1.0233E-14	2.66316E-21	1.35075E-21
30	2.29774E-09	1.88923E-08	1.46197E-12	2.6268E-20	1.49189E-20
35	4.17265E-09	2.33378E-08	5.11687E-11	1.33139E-19	8.19779E-20

Table 6: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P7.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	0.000084619	0.00045722	4.77648E-12	5.34644E-28	2.42139E-28
15	0.000136281	0.000584415	1.32696E-08	1.01389E-23	5.9794E-24
20	0.000221836	0.000767799	7.26562E-07	1.33817E-21	9.00555E-22
25	0.000365068	0.00100464	8.20078E-06	2.44285E-20	1.77941E-20
30	0.000575818	0.00124289	4.18529E-05	1.66604E-19	1.27919E-19
35	0.000837699	0.00154148	0.000135398	6.49209E-19	5.17466E-19
40	0.00113001	0.00182337	0.000328958	1.78671E-18	1.46426E-18
45	0.00141376	0.00218279	0.00065972	3.90594E-18	3.26994E-18
50	0.00187424	0.00262216	0.001156062	7.27679E-18	6.19463E-18
55	0.00229568	0.00305265	0.001835632	1.208E-17	1.0422E-17
60	0.002691025	0.00350622	0.002706007	1.84063E-17	1.60533E-17
65	0.00317023	0.003953321	0.003766543	2.62722E-17	2.31194E-17
70	0.0037843	0.004551326	0.005010512	3.56411E-17	3.15981E-17
75	0.00437956	0.005300236	0.006427055	4.64424E-17	4.1432E-17
80	0.00499511	0.005989234	0.00800279	5.85865E-17	5.25434E-17
90	0.00664569	0.00776216	0.01157266	8.65153E-17	7.82472E-17
100	0.0084123	0.00965332	0.015601049	1.18673E-16	1.08011E-16
110	0.01008223	0.01172216	0.019977126	1.54401E-16	1.41211E-16
120	0.0120796	0.01402201	0.024605016	1.93165E-16	1.77334E-16
10	0.000084619	0.00045722	4.77648E-12	5.34644E-28	2.42139E-28
15	0.000136281	0.000584415	1.32696E-08	1.01389E-23	5.9794E-24

20	0.000221836	0.000767799	7.26562E-07	1.33817E-21	9.00555E-22
25	0.000365068	0.00100464	8.20078E-06	2.44285E-20	1.77941E-20
30	0.000575818	0.00124289	4.18529E-05	1.66604E-19	1.27919E-19
35	0.000837699	0.00154148	0.000135398	6.49209E-19	5.17466E-19

Table 7: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P13.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	1.18568E-05	5.14997E-05	3.98333E-15	4.14562E-27	1.61543E-27
15	0.000016932	6.23979E-05	1.12935E-10	3.97198E-23	2.11905E-23
20	2.55426E-05	8.19505E-05	1.97713E-08	3.72624E-21	2.32606E-21
25	3.65516E-05	0.000105801	4.48504E-07	5.542E-20	3.80139E-20
30	5.60761E-05	0.000142362	3.64707E-06	3.29638E-19	2.40759E-19
35	9.01068E-05	0.000197641	1.64626E-05	1.1645E-18	8.89453E-19
40	0.000161486	0.000313329	5.13644E-05	2.97625E-18	2.35056E-18
45	0.000254746	0.00044572	0.000125165	6.13991E-18	4.97588E-18
50	0.0003743	0.000598072	0.000256377	1.09165E-17	9.0294E-18
55	0.000534	0.000833	0.000462607	1.74386E-17	1.46633E-17
60	0.000743	0.00108	0.000758747	2.57303E-17	2.19287E-17
65	0.001	0.00138	0.001156062	3.57397E-17	3.08009E-17
70	0.00131	0.00173	0.001662001	4.7369E-17	4.12063E-17
75	0.00168	0.00213	0.002280461	6.04978E-17	5.3044E-17
80	0.00209	0.00258	0.003012284	7.49994E-17	6.62025E-17
90	0.00307	0.00364	0.004807591	1.07635E-16	9.60371E-17
100	0.00423	0.00486	0.007015052	1.44404E-16	1.29893E-16
110	0.00554	0.00624	0.009585914	1.84614E-16	1.67105E-16
120	0.00699	0.00774	0.012465833	2.27741E-16	2.07158E-16
10	1.18568E-05	5.14997E-05	3.98333E-15	4.14562E-27	1.61543E-27
15	0.000016932	6.23979E-05	1.12935E-10	3.97198E-23	2.11905E-23

20	2.55426E-05	8.19505E-05	1.97713E-08	3.72624E-21	2.32606E-21
25	3.65516E-05	0.000105801	4.48504E-07	5.542E-20	3.80139E-20
30	5.60761E-05	0.000142362	3.64707E-06	3.29638E-19	2.40759E-19
35	9.01068E-05	0.000197641	1.64626E-05	1.1645E-18	8.89453E-19

Table 8: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P14.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	2.00235E-07	2.84981E-06	9.17773E-22	1.06855E-33	2.66797E-38
15	3.4033E-07	2.92306E-06	3.98333E-15	1.60871E-27	1.19293E-30
20	6.4288E-07	3.26503E-06	8.63728E-12	1.89179E-24	7.64513E-27
25	1.32354E-06	4.07189E-06	8.87566E-10	1.28273E-22	1.43375E-24
30	0.000002235	5.1155E-06	1.97713E-08	2.09745E-21	4.61933E-23
35	3.7235E-06	6.80852E-06	1.83406E-07	1.52519E-20	5.45259E-22
40	5.85211E-06	9.78087E-06	9.82574E-07	6.69377E-20	3.44137E-21
45	0.000009623	0.0000151	3.64707E-06	2.10029E-19	1.4323E-20
50	1.58455E-05	0.000024	1.04633E-05	5.21446E-19	4.45724E-20
55	0.00002632	0.0000382	2.48788E-05	1.0926E-18	1.12331E-19
60	0.00004259	0.00006	5.13644E-05	2.01688E-18	2.4178E-19
65	0.00006725	0.0000914	9.5104E-05	3.37882E-18	4.61094E-19
70	0.000102	0.000134	0.000161614	5.24705E-18	7.99831E-19
75	0.000151	0.000192	0.000256377	7.67134E-18	1.28645E-18
80	0.000214	0.000264	0.00038454	1.06827E-17	1.94641E-18
90	0.000393	0.000464	0.000758747	1.85097E-17	3.8663E-18
100	0.000649	0.000744	0.001312377	2.86946E-17	6.67157E-18
110	0.000993	0.00111	0.002061697	4.10776E-17	1.04037E-17
120	0.00142	0.00156	0.003012284	5.54449E-17	1.5051E-17
10	2.00235E-07	2.84981E-06	9.17773E-22	1.06855E-33	2.66797E-38
15	3.4033E-07	2.92306E-06	3.98333E-15	1.60871E-27	1.19293E-30

20	6.4288E-07	3.26503E-06	8.63728E-12	1.89179E-24	7.64513E-27
25	1.32354E-06	4.07189E-06	8.87566E-10	1.28273E-22	1.43375E-24
30	0.000002235	5.1155E-06	1.97713E-08	2.09745E-21	4.61933E-23
35	3.7235E-06	6.80852E-06	1.83406E-07	1.52519E-20	5.45259E-22

Table 2: Quantum and classical thermally weighted transmission functions and the values of $k_i^{TST}(T)$ for both isotope, for the model pore P8.

T (K)	$p_4(T)$	$p_3(T)$	$p_{classic}(T)$	$k_4^{TST}(T)$	$k_3^{TST}(T)$
10	9.9407E-14	1.03112E-11	3.54293E-50	2.09866E-30	3.84494E-31
15	1.82485E-13	1.1029E-11	3.94233E-34	2.52295E-25	8.13844E-26
20	3.02771E-13	1.12098E-11	4.33437E-26	8.3839E-23	3.58856E-23
25	5.912E-13	1.30875E-11	2.96643E-21	2.66316E-21	1.35075E-21
30	1.2531E-12	1.64516E-11	5.04379E-18	2.6268E-20	1.49189E-20
35	4.30042E-12	3.56114E-11	1.03565E-15	1.33139E-19	8.19779E-20
40	1.20584E-11	6.74987E-11	5.66529E-14	4.4585E-19	2.91655E-19
45	3.91847E-11	1.62608E-10	1.28186E-12	1.13401E-18	7.7751E-19
50	1.19896E-10	3.73689E-10	1.56235E-11	2.38153E-18	1.69519E-18
55	3.614E-10	8.82731E-10	1.21366E-10	4.3546E-18	3.19567E-18
60	1.38293E-09	2.6617E-09	6.72262E-10	7.18175E-18	5.40522E-18
65	4.56706E-09	7.56352E-09	2.86992E-09	1.0947E-17	8.41556E-18
70	1.31743E-08	1.97311E-08	9.98235E-09	1.56925E-17	1.22825E-17
75	3.37264E-08	4.7058E-08	2.94674E-08	2.14255E-17	1.70299E-17
80	7.79276E-08	1.03217E-07	7.61188E-08	2.81274E-17	2.26559E-17
90	3.23933E-07	3.99771E-07	3.71851E-07	4.42815E-17	3.6448E-17
100	1.0366E-06	1.22281E-06	1.32917E-06	6.37632E-17	5.33684E-17
110	2.97949E-06	3.11547E-06	3.78368E-06	8.61413E-17	7.30541E-17
120	6.37077E-06	6.88206E-06	9.07673E-06	1.11017E-16	9.51483E-17
10	9.9407E-14	1.03112E-11	3.54293E-50	2.09866E-30	3.84494E-31
15	1.82485E-13	1.1029E-11	3.94233E-34	2.52295E-25	8.13844E-26

20	3.02771E-13	1.12098E-11	4.33437E-26	8.3839E-23	3.58856E-23
25	5.912E-13	1.30875E-11	2.96643E-21	2.66316E-21	1.35075E-21
30	1.2531E-12	1.64516E-11	5.04379E-18	2.6268E-20	1.49189E-20
35	4.30042E-12	3.56114E-11	1.03565E-15	1.33139E-19	8.19779E-20
