Index for Bowl Paper PhL 12.2.15

There never was an index until today.

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Section 1 : last update 12/11/15, index is complete

Fig (1.1.1) is from:	bipolar coordinates.vsd, page 11	math/curv.../bipolar doc
Fig (1.1.2) is from:	toroidal1.vsd, page 1	
code is from:	toroidal2.mws	
Fig (1.1.3) is from:	bipolar coordinates.vsd, page 2	math/curv.../bipolar doc
code is from:	cats and u_theta plot.mws	math/curv.../bipolar doc
Fig (1.2.1) is from:	bowl toroidal.vsd, page 4	

Metric tensor code below (1.2.2): toroidal3.mws

Figs below (1.2.7): Maple = bowl and torus pictures.mws
Visio = bowl toroidal.vsd, page 8

Fig (1.2.18) bowl toroidal.vsd, page 4

Section 2: last update 12/11/15, index is complete

Eq (2.1.1) ellipsoid solution: 3 potential of charged ellipsoid.doc, page 4
see curvlinear/ellipsoidals

Eq (2.1.2) ellipsoid specific sol: 3 potential of charged ellipsoid.doc, page 4

atomic forms (2.2.1) Cartesian: Sturm Liouville atoms in various coord systems.doc
see curvlinear

atomic forms (2.2.2) sphericals: Sturm Liouville atoms in various coord systems.doc
see curvilinear

atomic forms (2.2.3) toroidal: Sturm Liouville atoms in various coord systems.doc
but uses different variable names see curvilinear
also toroidal coordinates.doc, page 43 see curv/toroidal

atomic forms (2.2.4) ellipsoidal: 3 potential of charged ellipsoid.doc, page 35
see curvlinear/ellipsoidals

generalized Mehler-Fok (2.4.1) verified from page 2 of Boeing thing (manilla folder)

regular Mehler-Fok (2.4.2) Boeing page 1

Fig (2.4.15) bowl potential plot: bowlplot2.mws bowl in toroidals

Section 3: last update 12/11/15, index is complete

Fig (3.1) double bowl: bowl toroidal.vsd, page 1

Fig (3.12) lens: bowl toroidal.vsd, page 3

Section 4 last update 12/11/15, index is complete

Fig 4.2.6 bowl kinematics: method of inversion support.vsd
electrostatics/inversion theory

Maple (4.2.12) , a σ plot bowl sigma plots.mws
*****

Maple (4.2.13) code for small hole: bowl sigma plots.mws
*****
and Visio picture method of inversion support.vsd
electrostatics/inversion theory

Section 5 last update 12/11/15, index is complete

Fig (5.3) bowlplot v2.mws in
bowl in toroidals
and Visio in bowl support Dec 2015.vsd
****

Fig (5.4) "discontinuity" toroidal1.vsd page 5

Fig (5.6) bowlplot v2.mws
bowl in toroidals

and Visio in bowl support Dec 2015.vsd
****

Fig (5.7) copy of Fig (1.3.1)

Fig (5.8) bowlplot v2.mws
bowl in toroidals

Fig (5.10) bowlplot v2.mws
bowl in toroidals

Fig (5.11) bowlplot v2.mws
bowl in toroidals

Fig (5.12) bipolar coordinates.vsd, page 12
math/curv.../bipolar doc area

Fig (5.13) bowlplot v2.mws
bowl in toroidals

Fig (5.14) bowlplot v2.mws
bowl in toroidals

Section 6 last update 12/11/15, index is complete

All plots are from
bowlplot v2.mws
bowl in toroidals

Section 7 last update 12/11/15, index is complete

Most integrals are derived in "doing Mehler transform integrals.doc" perhaps in an odd location.
This includes: (7.1.3), (7.1.4), (7.1.5), (7.1.6) and (7.1.7)
D:\Work\My Interests\Math\Integrals series sums+ GR\

I derive the integral (7.1.8)

$$\int_0^\infty d\tau\, P_{i\tau-1/2}(y)\, sh(b\tau)\, sh(\pi\tau)/ch^2(\pi\tau) = \frac{\sqrt{2}}{\pi}\,\frac{1}{\sqrt{y+\cosh b}}\,\tan^{-1}\left(\frac{\sqrt{1-\cosh b}}{\sqrt{y+\cosh b}}\right)$$

at the very end of "bowl surface charge in toroidals.doc". And this integral agrees with integral p 20 #3 in the Boeing book.

Maple code doing ∂_b above (7.2.4) is in "sqrt one plus cosx.mws"

Legendre examples above (7.4.1) does not exist but very simple

Maple P and Q functions: PandQ.mws
bowl in toroidals

Fig (7.4.5) sine like plots sqrt one plus cosx.mws
Fig (7.4.8) and (7.4.9) same as above bowl in toroidals

Section 8 last update 12/11/15, index is complete

nothing here

Section 9 last update 12/11/15, index is complete

all code and plots bowlplot v2.mws z ρ
bowl in toroidals

Section 10 last update 12/21/15, index is complete

Fig (10.1.2) bowl toroidal.vsd page 2
bowl in toroidals

Maple (10.2.2) toroid how many terms.mws
****

Fig (10.2.4) bowl toroidal.vsd, page 2

Maple (10.2.6)	toroid how many terms.mws, circles from cats and u_theta plot.mws ********** bipolar
Maple (10.2.7)	toroid how many terms.mws, circles from cats and u_theta plot.mws ********** bipolar
Maple (10.2.8)	toroid how many terms.mws **********
Fig (10.2.9) C versus R	TCF2.mws (toroidal cap function) bowl in toroidals
Maple (10.3.1,2,3,4,5)	potential for torus.mws **********
Fig (10.2.4)	bowl toroidal.vsd, page 2
Fig (10.2.10) nested circles	cannot find this vsd picture!

Maple graph *(I.1.9)* from App B study the R=1 limit of C.mws

Maple (10.3.1) plot tor pot:	potential for torus.mws
Maple (10.3.2) plot tor pot:	potential for torus.mws
Maple (10.3.3) plot tor pot:	potential for torus.mws
Maple (10.3.4) plot tor pot:	potential for torus.mws
Maple (10.3.5) plot tor pot:	potential for torus.mws
Fig (10.4.4)	bowl toroidal.vsd, page 2
clip (10.4.8)	Chester Snow pdf
Maple (10.4.9)	TCF1.mws
Fig (10.4.10)	three circles, cannot find this anywhere.
Fig (10.6.1)	bowl toroidal.vsd, page 9
Maple (10.6.8)	plot toroid sigma1.mws
Maple (10.6.9)	plot toroid sigma1.mws
Maple (10.6.10)	plot toroid sigma1.mws
Maple (10.6.11)	plot toroid sigma1.mws
Maple (10.6.12)	plot toroid sigma1.mws
Visio part in	bowl toroidal.vsd, page 6

Fig above old (10.13) circle with u and θ:	bowl toroidal.vsd, page 2
graph above old (10.13) looks like Excel?	cannot find this graph

Appendix A last update 12/25/15, index is complete

bowl code	bowlplot v2.mws
toroid code	potential for torus.mws

Appendix B last update 12/25/15, index is complete

Fig (B.1.3)	taken from (6.1) of Bipolar
Maple (B.1.4)	th.mws
Maple (B.1.8)	th.mws
Maple (B.1.17)	th.mws
Visio (B.1.17)	bowl support Dec 2015.vsd
text (B.1.17) right	in edit log circa Dec 24, 2015
Visio (B.2.5)	bowl support Dec 2015.vsd

Appendix C: last update 12/25/15, index is complete

Visio (C.3)	not on computer!
Visio (C.4)	superposition support.vsd in D:\Work\My Interests\Physics\E&M\Electrostatics\superposition Dirichlet
Clip (C.5)	from Kelvin's PDF page 187
Clip (C.5) Visio	bowl toroidal.vsd, page 8

Appendix D: last update 12/25/15, index is complete

Fig (D.1) iris and bowl	not on computer, same as C.1 above
Fig (D.2)	method of inversion support.vsd, page 11
Fig (D.9)	method of inversion support.vsd, page 11
Fig (D.10) pair	method of inversion support.vsd, page 12
Fig (D.15) green disk figure	field lines for iris potential.mws

Appendix E: last update 12/25/15, index is complete

Fig (E.13)	bowl toroidal.vsd, p 8

Appendix F: last update 12/25/15, index is complete

nothing

Appendix G: last update 12/25/15, index is complete

The path here is detailed in "canonical -- Section 1_4_1 The Definition Method for the Bowl.doc" in the electrostatics/ canonical folder. I do not show all details in App G, but much more than they showed!

Fig (G.7) integration region canonical.vsd
D:\Work\My Interests\Physics\E&M\Electrostatics\Canonical

general topic doc material is in: D:\Work\My Interests\Physics\E&M\Electrostatics\Canonical\
canonical -- Section 1_4_1 The Definition Method for the Bowl.doc

Maple (G.28) legendre sum 2.mws

Appendix H: last update 12/21/15, index is complete

Maple (H.1.13) attempt at 2_4_10.mws bowl

Maple (H.1.21) attempt at 2_4_10.mws bowl

Maple (H.1.26) attempt at 2_4_10.mws bowl

Maple (H.1.27) attempt at 2_4_10.mws bowl

Maple (H.1.29) attempt at 2_4_10.mws bowl

Maple (H.1.31) attempt at 2_4_10.mws bowl

Maple (H.4.7) toroid charge density doc related.mws bowl

Maple (H.4.10) toroid charge density doc related.mws bowl

Maple (H.4.14) toroid charge density doc related.mws bowl

Appendix I: last update 12/21/15, index is complete

Fig (I.1.4) with $\rho_c = 1$ bowl toroidal.vsd page 2
bowl in toroidals

Fig (I.1.8) : study the R=1 limit of C.mws
Fig (I.1.9) : study the R=1 limit of C.mws
****

Fig (I.2.4) warm up ex: Example of non-uniform etc. mws
****

Fig (I.2.16) plots: Example of non-uniform etc. mws
****

Fig (I.2.21) flat plot study the R=1 limit of C.mws
****

Fig (I.2.22) flat plot diving study the R=1 limit of C.mws
****

Fig (I.3.2) bowl toroidal.vsd, page 2

Fig (I.3.4) of purple toroid from the web, could not really identify the source

Fig (I.3.9) aiming method study the R=1 limit of C.mws
****

Fig (I.3.12) code and output: study the R=1 limit of C.mws
****

Fig (I.3.13) 6 point plot study the R=1 limit of C.mws

Fig (I.3.15) study the R=1 limit of C.mws

Appendix J: last update 12/21/15, index is complete

Above (J.2.2) Maple not worth having in a file

Maple (J.4.7) toroid charge density doc related.mws bowl

Maple (J.5.21) and all following: delta z mnus z'.mws

Appendix K: last update 12/21/15, index is complete

Maple (K.1.9) bowl and torus pictures.mws

Maple (K.1.10) toroid charge density doc related.mws bowl

Appendix L : last update 12/28/15, index is complete

Maple code (L.4.7) RHS and LHS.mws

Maple code (L.5.7) test integral 1.mws

Appendix M : last update 1/3/16, index is complete

Fig (M.1) Maple code App M.mws
Visio bowl toroidal.vsd, page 9

Fig (M.2) Ahlfors support.vsd, page 6 (in complex var area)

Fig (M.8) Ahlfors support.vsd, page 56

Index is complete as of 12/21/15