Visio Index PhL 2.9.14

last full update 10.9.14

Chapter 1

Fig 1.1 electret	king meets stak.vsd	page 7
Fig 1.2 div theorem	king meets stak.vsd	page 7
Fig 1.3 simple boundary	lines1.vsd	page 2
Fig 1.4 pillbox	lines1.vsd	page 6 left only!
Fig 1.5 conductors	king meets stak.vsd	page 6
Fig 1.6 Feynman diagram	king meets stak.vsd	page 7
Fig 1.7 gray/gray boundary	king meets stak.vsd	page 5
Fig 1.8 gray capacitor	king meets stak.vsd	page 5
Fig 1.9 RC circuit	king meets stak.vsd	page 5

Chapter 2

Fig 2.1 quarter circle	lines1.vsd	page 1
Fig 2.2 wire slice rectangle	lines1.vsd	page 1
Fig 2.3 two roots	lines1.vsd	page 1
Fig 2.6 overlay of curves	lines1.vsd	page 1
Fig 2.11 wire with endcaps	lines1.vsd	page 1
Fig 2.15 stripline and twin lead	originals from lines doc!	
Fig 2.16 fat twinlead	original from lines doc!	

Chapter 3

Fig 3.1 PE data from Eaton and Kmiec	local pdf file	
Fig 3.2 red square on boundary	lines1.vsd	page 1 older version
Fig 3.3 blue wire cross section	lines1.vsd	page 2
Fig 3.4 two cyl with red square loop	lines1.vsd	page 2
(3.7.5) drawing with arrows and Steps	repairs.vsd	page 2
above 3.7.17 no Fig #	repairs.vsd	page 3
Fig 3.5 two eggs and red ovals	repairs.vsd	page 2
Fig 3.6b	repairs.vsd	page 2
below Fig 3.6b kinematics	repairs.vsd	page 2
Fig 3.7 cross sec of TL	lines1.vsd	page 5
Fig 3.8 top view of TL	lines1.vsd	page 5
Fig 3.9 oblique view of TL	lines1.vsd	page 5
Fig 3.10 cross sec and voltmeter	repairs.vsd	page 3

Chapter 4

Fig 4.1 R and s_{ij} lines	bug chapter 4.vsd	page 2
Fig 4.2 R lines and V(z)	bug chapter 4.vsd	page 1
Fig 4.3 blue s_{ij} lines	bug chapter 4.vsd	page 1
Fig 4.4 circles kinematics	bug chapter 4.vsd	page 2
Fig 4.7 coax kinematics	bug chapter 4.vsd	page 2
Fig 4.10 W(x) s_{ij} lines	bug chapter 4.vsd	page 3
Fig 4.11 red loop for L_e	lines1.vsd	page 6

Fig 4.12 TL with squares	bug chapter 4.vsd	page 7	
Fig 4.13 two wide conductors	repairs.vsd	page 2	
Fig 4.14 2nd circle kinematics	bug chapter 4.vsd	page 3	
(4.13.6) b_1 circles	lines1.vsd	page 8	

Chapter 5

Fig 5.1 R lines for ln(s/s)limit	bug chapter 4.vsd	page 3	
Fig 5.2 amoeba conductors	bug chapter 4.vsd	page 4	
Fig 5.3 capacitor problem	bug chapter 4.vsd	page 5	

Chapter 6

Fig 6.1 Perga	bug chapter 4.vsd	page 4	
Fig 6.3 cats eyes	bug chapter 4.vsd	page 5	
Fig 6.4 cats eyes	bug chapter 4.vsd	page 5	
Fig 6.5 cats eyes	bug chapter 4.vsd	page 5	
Fig 6.6 prox effect light facing	eddy.vsd	page 4	App P
Fig 6.16 same direction	repairs.vsd	page 3	

Chapter 7 none

Appendix A none

Fig below (A.7.7) superposition	lines1.vsd	page 5	

Appendix B

Fig B.1boundary	lines1.vsd	page 2	
Fig B.2 egg	lines1.vsd	page 2, now page 8?	
Fig B.3 mag current atoms	king meets stak.vsd	page 6	
Fig B.4 disk kinematics	king meets stak.vsd	page 7	
Fig B.5 Stakgold	taken from my Stak notes somewhere!		
Fig B.6 melted egg with red circle	bug chapter 4.vsd	page 6	
Fig B.7 disk kinematicsagain	king meets stak.vsd	page 7	
Fig B.8 fields for round wire cross sec	king meets stak.vsd	page 7	

Appendix C

Fig below (C.1.1)	lines1.vsd	page 1 piece of image	
Fig C.1 rect wire kinematics	bug chapter 4.vsd	page 6	
Fig C.5 Kuester's plot	lines1.vsd	page 8	
Fig C.6 flat wire width w	reactance.vsd	page 2	
Fig C.7 red loop in flat wire	reactance.vsd	page 2	
Fig C.9,10 and 11 are Maple generated			
Fig C.13 mag lines for flat wire	mag field plots REVIEWED.doc in App C		
Fig C.14 mag lines for flat wire	mag field plots REVIEWED.doc in App C		
Fig C.15 hollow pipe	reactance.vsd	page 2	

Appendix D

Fig D.1 n(φ) picture	lines1.vsd	page 6	

Fig D.2 charge pump 1/4 disk		lines1.vsd	page 1
Fig D.3 blue Smythe annulus		lines1.vsd	page 7
Fig D.4 quadrupole		lines1.vsd	page 7
Fig D.5 torsion waves		lines1.vsd	page 7
Fig D.6 Debye surface layer		repairs.vsd	page 3
Fig D.7 row of charge pumps		repairs.vsd	page 1
Fig D.8 line of resistors only		reactance.vsd	page 3

Appendix E

Fig E.1 for how thick is charge		lines1.vsd	page 1

Appendix F

Fig F.1 par plate waveguide		bug chapter 4.vsd	page 6

Appendix G nada

Appendix H

Fig H.1 pink circle		lines1.vsd	page 2

Appendix I

Fig I.1 pink circle		lines1.vsd	page 2 (same pic)
Fig I.2 λ plane for $H^{(1)}$		lines1.vsd	page 4

Appendix J none

Appendix K

Fig K.1,2.3 network pix		reactance.vsd	page 1
Fig K.4 resistor ladder		reactance.vsd	page 3
Fig K.5 y z section, from Fig K.3		reactance.vsd	page 1
Fig K.6 red loop for L_e		reactance.vsd	page 1

Appendix L

Fig L.1 spheres 3 regions	also Fig L.1'	king meets stak.vsd	page 3
Fig L.3 sphere 2 regions		king meets stak.vsd	page 9
Fig L.4 wedgie		king meets stak.vsd	page 9
Fig L.5 2 region close	also Fig L.5'	king meets stak.vsd	page 9
Fig L.6 1 region	also Fig L.6'	king meets stak.vsd	page 9

Appendix M

Fig M.1 two cyl kinematics		repairs.vsd	page 1

Appendix N Hall

Fig N.1 hall block		Hall effect2.vsd	page 1
Fig N.2 radial Hall kinematics		Hall effect2.vsd	page 1,3 combo

Appendix O Mag field line plotting

Fig O.3 overlay	rect conduct B field lines.vsd	page 1
Fig O.4 two cyl kinematics	repairs.vsd	page 4

Appendix P Eddy Currents (see combined Visio/Maple index below)

Fig P.1,2 eddy views	eddy.vsd	page 4
Fig P.3 radial Hall kinematics grey	Hall effect2.vsd	page 3
Fig P.6 cylinder grey rectangle	eddy.vsd	page 2 (close)
Fig P.7(a) is a Maple arrows.vsd picture		
Fig P.7(b) arrows	eddy.vsd	page 3
Fig P.7(c) is a Maple arrows.vsd picture		
Fig P.8 gray rectangle in cyl	eddy.vsd	page 2
Fig P.9 arrows overlay	eddy.vsd	page 2
Fig P.10 arrows overlay	eddy.vsd	page 2
Fig P.11 is a Maple arrows.vsd picture		
Fig P.12 wash green	eddy.vsd	page 4 edited
Fig P.13 wash green	eddy.vsd	page 4 as is
Fig P.14,P.15 with legends added	eddy.vsd	page 5
Fig P.18 TL eddy currents	eddy.vsd	page 1
Fig P.19 from Smith paper in Refs		

Appendix Q props of k(ω) and Z_0

Fig Q.6.1 two arrows in z plane	new way complex z plane.vsd	page 1

Appendix R Belden case study

Fig R.8 attenuation plot	8281 attenuation 2014.xls

Appendix S Averaging nada

More on Appendix P. After writing the above, I found that I had already made a combined Visio and Maple index for Appendix P in that folder. Here is that combined index right here:

Maple and Visio Index for Appendix P PhL 5.6.14

This is the appendix on eddy currents.

Fig P.1	eddy.vsd, page 5
Fig P.2	eddy.vsd, page 5
Fig P.3	hall effect2.vsd, page 3
Maple code below (P.2.10)	eddy2.mws, very start
Maple code below (P.3.25)	Section P3c.mws
Fig P.4	Section P3c.mws

"We have verified using Maple that the stream function $T_z(r,\theta)$ shown in (P.3.32) satisfies (P.3.19) and that the electric fields $E_r(r,\theta)$ and $E_\theta(r,\theta)$ satisfy (P.3.6). "

The above code is in:	problem2.mws
Maple code below (P.3.33)	problem2.mws, toward the end
Fig P.5	problem2.mws, toward the end
Fig P.6	eddy.vsd, page 2 (but has been added to)
Fig P.7(a)	arrows.mws
Fig P.7(b)	arrows.mws, post-process in eddy.vsd, page 3
Fig P.7(c)	arrows.mws
Fig P.8	eddy.vsd, page 2
Fig P.9	arrows.mws, post-process in eddy.vsd, page 2
Fig P.10	arrows.mws, post-process in eddy.vsd, page 2
Fig P.11	arrows.mws
Fig P.12	eddy.vsd, page 4
Fig P.13	eddy.vsd, page 4 (same picture edited)
Fig P.14	field lines 2.mws, post-process in eddy.vsd page 5
Fig P.15	field lines 2.mws, other polarity, pp in eddy.vsd page 5
Fig P.16	field lines 2.mws (without abs value)
Fig P.17	field lines 2.mws (without abs value)
Fig P.18	source lost, post-process in eddy.vsd, page 1
Fig P.19	taken from PDF of G. Smith

Other interesting Maple files:

field lines 2.mws

Shows a detailed plot of the magnetic field lines for two-cylinder transmission line at DC. This picture does not show B field strength, so not too useful for eddy current illustration. However, it also shows that the B field lines do not align with the cylinders, which is a point to be made in Chapter 4 so Chap 4 does not apply at low frequencies.

densityplot.mws

Experimenting with Maple's densityplot routine; also a possible plot of J_z in cylinder cross section for a the simple functional form of (P.5.6).