

HcdJW' _____ CD! G BYh&)' _____ GdHYa VVf %ž&\$%

: fca . KUYF J Ub 5ggWY fKUYFJ UbUggWY4_i Yi j Yb'VYk
G V'VMi FYdcfhcb 7cbZYfYbW]o 7cdYb\Uj Ybž 5i [i gh%(! %ž&\$%

FYdcfhcb K Y VobZYfYbW *Orthogonal Polynomials and Holomorphic Dynamics*ž
7cdYb\Uj Ybž 8Yba Uf_ž 5i [i gh%(! %ž&\$% "

HAY dUghZYk nUfg 7cdYb\Uj Yb \Ug VVYb \cg]b[Ubi a VVf cZ]bHYfg]b[VobZYfYbWg
fYVj Ubhc ci f UMi]m[fci d. Ukcf_g]cd cb *Orthogonal Polynomials, Hankel and Jacobi
Matrices* f5i [i gh&*! & , ž &\$ - ž Ub]bHYfYbW]cbU gna dcg] a cb *Orthogonal Polynomials
and Special Functions - a complex analytic perspective* f5i bY %! %ž &\$ %ž U kcf_g]cd
cb *Special Functions and Their Applications* f5i [i gh& , ! ' \$ž &\$ % ž Ub]bHYfYbW]cbU gna !
dcg] a *The Real World is Complex*ž]b \cbci f cZ7\fg]Ub 6V[f5i [i gh&*! & , ž &\$ %ž ž U
kcf_g]cd cb *Orthogonal Polynomials and Special Functions* fBcj Ya VVf %! %ž &\$ % ž ' "

: cf K]gnUfž Ub]bHYfYbW]cbU VobZYfYbWcb *Orthogonal Polynomials and Holomorphic Dy-
namics* kUg\YX cb 5i [i gh%(! %ž &\$ %ž U hH Y 7Ufg]V[5WXYa rHAY Ua cZH Y VobZYfYbW
kUg]c V]b[hc[YH Yf Yi dYf]b UYUgfyUHX hc cfH c[cbU dc`rba]UgUbX \c`ca cfd\]V
XrbLa]W gngYa g]c Yi WUb[Y_bck YX[Y' HAY cf[Ub]nYfgk YfY >UW 7\fg]Ug]b f5i bX
I b] Yfg]mGk YXYbUk < Ybf_ DXYfg]b fi b] Yfg]mcZ7cdYb\Uj Ybž 8Yba Uf_ž Vch žca
ci f UMi]m[fci dž UbX 7\fg]Ub < Ybf_g]b fiHMb]W I b] Yfg]mcZ8Yba Uf_ž UbX 7Ufg]b
@ bXYDHYfg]b fi cg_]XYI b] Yfg]m8Yba Uf_ž k\c UfY Yi dYf]b \c`ca cfd\]VXrbLa]W



: I i fY% 7cbZYfYbW [fci d d]Mi fY'

Gca Y a UrukcbXYf. k\mUFY Vch hcd]Mj fYUHX3 <c`ca cfd\]Mkrlba]Mj]g Uvci hH Y]H YFU]cb cz fu]cbU ž bM]cbgž Vi hZcf]YFU]cbg cz U dc`nbca]U H YFY]g Ub]bHYg]b[WbbW]cb k]A cfh c[cbU dc`nbca]Ug' @hT(z) = z^d + k_1 z^{d-1} + ... WY U dc`nbca]U cz XY[fY d ≥ 2 UbX Wbg]XYf]g]YFU]g T^2(z) = T(T(z)) UbX]b [YbYU T^n(z) = T^{n-1}(T(z))ž H Yb T^n(z)]g U dc`nbca]U cz XY[fY d^n UbX H YgY UY dUfhcz H Y gVei YbW cz cfH c[c! bU dc`nbca]Ug Zcf H Y Yei]]M]i a a YUj fY cz UgdW]U g]hBž k\]W]g H Y ž]Ug]hZcf H Y dc`nbca]U Tž H Y g]hk\YFY (T^n(z))_n]g bchbcfa U" bXYXž 6UfbgYnž <Uff]b[hcb UbX ; Yfcb]a c g]ckYX]b %, žž H UhZcf H Y gVei YbW cZa cb]McfH c[cbU dc`nbca]Ug (P_k)_k Zcf H Y Yei]]M]i a a YUj fY cb BžcbY\Ug

$$P_1(z) = z + k_1/d, \quad P_{kd}(z) = P_k(T(z)), \quad P_{d^n}(z) = T^n(z) + k_1/d.$$

<YbW H Y]YFU]cb cz U dc`nbca]U]g]b]a UYmfYUHX hc cfH c[cbU dc`nbca]Ug UbX dchYb]U H Ycfmžcf H Y WffYg]cbX]b[ž]Ug]h' H Y kcf_g]cd \UX Ubi a VYf cz]b]]YX g]YU_Yfg k]A KU_g cb cfH c[cbU dc`nbca]Ug cf H Y]YFU]cb cz fu]cbU a Ubg' Hkc g]YU_Yfg k YFY UY hc]b]Y[fUH Vch hcd]Mj]brc cbY KU_" 7UfgYb @ bXY DM]Yg]b]U KU_ k Uj cb Orthogonal polynomials and dynamical systems UbX]hg ci `X \U Y VYb H Y ž]gh KU_ cz H Y kcf_g]cd ž Vi hk Uj [] Yb cb H Y g]WbX XUH ?Vj]b D] [f]a]U KU_ Gegenbauer polynomials and critically fixed Newton's method Ugc g] WXYX]b WbbW]b[]YFU]cbg k]A H Y kY` _bckb ; Y] YbWU Yf dc`nbca]Ug' 8U]X 8Ua Ub]U KU_ cb The Fibonacci Hamiltonian YI d]U]bYX H Y g]W]U d]cdYf]YgczU g]YU]U G]V" X]b[Yf cdYU]cf j]U U dc`nbca]U Xrlba]W g]g]Ya fYUHX hc H Y :]VcbU]U g]Vei YbW' Acghcz H Y ch Yf KU_g k YFY]A Yf cb cfH c[cbU dc`nbca]Ugž XY]fa]b]b]gcz cfH c[cbU dc`nbca]Ugž dU]cfH c[cbU dc`nbca]Ugž YI Wd]cbU dc`nbca]Ugž 7\Wrh g] Vj dc`nbca]Ugž a i]d'Y cfH c[cbU dc`nbca]Ugž UbX a ca Ybhd]cVYa g cb H Y cbY \UbXž cf Wbžcfa U ž]bYgg]UbX i b]žcfa]U]cbž <U g]XcfZZ]a Ybg]cb cz ž]Ug]h]g] flbXca W]a d'YI Xrlba]Mj 5W]Ub Wj Yf]b[gž Yei]dchYb]U []]b[ž UbX \ndYVc]W]a dcbYb]g cb H Y ch Yf \UbX" 6U]f]G]a cb \UbdYbYX hc VY]b 7cdYb\U] Yb H UhkY_ gc H UhkY \UX H Y d'YUj fY hc \YUf \ck \Yk Uj UY hc WbbW]cfH c[cbU dc`nbca]Ugcb H Y i b]h]V]W k]A DcbW]Y]U H YcfYa UbX H Y bi a Y]W flb[Y cz W]U]b ž]b]Y X]a Ybg]cbU Wb]fUA] h]cbg'

AmUj]W hc H Y a Ya VYfg cz ci f U]M]]m[fci d]g hc h]f]rc U]YbX cbY cz H Yg] 7cdYb! \U] Yb kcf_g]cd gcf WbžYfYbW]M]i M]i k]` a Y]hdYcd'Y ž]ca fYUHX UYUj UbX `YUf \ck cfH c[cbU dc`nbca]Ug UbX g]YU]U ž bM]cbg UY i g]Z `]b ch Yf UYUj cZa U] Ya U]M]'

Hcd]Mj (_____ CD! G BYh&) ') _____ G]d]Ya VYf %) ž &\$%

: fca . Hca ?ccfbk]bXYf fH'?'ccfbk]bXYf4i j Ubž
G V]W] FYdcfhcb B-GH8@A: kcf_g]cd ž Si [i gh+!' %ž &\$%

H Y 8]]U @V]U]ncZAU] Ya U]W : i bM]cbg]fB@A: ž \H]dg##X a Zb]g]H[c] ž k Uj`U bWYX]b &\$%\$' Bc Xci Vž H Y fYU]Yfgcz H]gBYk g]Y]Yf UY Z]a]]U]f k]A]H' 5'H ci [\ a]b]cf i d' XU]Yg UY a UKY fY [i `U]nž H Y bY]X k Uj ž]h]c d]YdU]Y a U]cf i dXU]Yg cz gca Y W]b]Yfgž UbX Yj Yb hc UX bYk W]b]Yfg' b dU]h]W/U]ž kcf_ hc H c]ci [\ `mi dXU]Y 7\U]Yf % fcf! H c[cbU Dc`nbca]Ugž UbX hc YI dUbX]g G Vg]W]cb % " + f]`Ugg]W CD]]b Hkc cf AcfY J U]U]Ygž]brc U g]YdU]Y W]b]Yfž]g bck Ua cgh W]a d'Y]X" : cf U `U]h Vccgh hc H]g d]c'W]ž H Y U H c]fg UbX H Y]f U]]g]cf g a Yh]]g g] a a Yf]b `UY Si [i ghžcf UcbY! kY_ kcf_g]cd UhB-Gž ; U]A Yf]M]i f [ž AU]nž UbXž W]g]Y hc K Uj]b [hcb 87" dU]h]W]U]b]g]k YFY H Y U H c]fg 6]` FY]b\U]Xž M]Ub Li UbX a ng]Y ž H Y a U] Ya U]M]U]k]g]cf Ac] fUX ž ga U]ž UbX H Y [YbYU a U] Ya U]M]YX]cf 5X] C'XY 8U] \ i]g' K Y X]g]M]gg]Xž WffY]W]X UbX YI H Y bY]X k\Uhk Uj UYU]mk f]H]bž UbX k Y UXXYX bYk dU]h]g' H YfY k Uj Ugc ž Yei Yb]b]YU]cb