

thePlate>thePlate.changeEinc (Calls: 20988000, Time: 5998.788 s)

Generated 09-Sep-2020 21:57:56 using performance time.
Class method in file C:\Users\sjensen\Documents\GitHub\chaffOptimizer\thePlate.m
[Copy to new window for comparing multiple runs](#)

Parents (calling functions)		
Function Name	Function Type	Calls
chaffElt>chaffElt.null2minRCSAvg	Class method	20988000

Lines that take the most time					
Line Number	Code	Calls	Total Time (s)	% Time	Time Plot
335	obj.JJ_theta = obj.ZZinv*obj.EE_theta/obj.scaleF...	20988000	1782.978	29.7%	<div></div>
336	obj.JJ_phi = obj.ZZinv*obj.EE_phi/obj.scaleFacto...	20988000	1726.343	28.8%	<div></div>
309	+obj.Byn_yy*sin(thetaLoc)*sin(phiLoc));	20988000	327.437	5.5%	<div></div>
319	+obj.Byn_yy*sin(thetaLoc)*sin(phiLoc));	20988000	323.067	5.4%	<div></div>
305	+obj.Bxn_yy*sin(thetaLoc)*sin(phiLoc));	20988000	318.744	5.3%	<div></div>
All other lines			1520.218	25.3%	<div></div>
Totals			5998.788	100%	

Children (called functions)					
Function Name	Function Type	Calls	Total Time (s)	% Time	Time Plot
sinc	Function	83952000	574.406	9.6%	<div></div>
Self time (built-ins, overhead, etc.)			5424.382	90.4%	<div></div>
Totals			5998.788	100%	

Code Analyzer results
No Code Analyzer messages.

Coverage results	
Show coverage for parent folder	
Total lines in function	58
Non-code lines (comments, blank lines)	31
Code lines (lines that can run)	27
Code lines that did run	27
Code lines that did not run	0
Coverage (did run/can run)	100.00 %

Function listing		
Time	Calls	Line
		280 function obj = changeEinc(obj,phiInc,thetaInc)
		281 %use to update the angle of the incident field and resolve for
		282 %current coefficients
18.682	20988000	283 obj.phiInc = phiInc; %azmuthal
8.292	20988000	284 obj.thetaInc = thetaInc;%elevation
1.430	20988000	285 kk = 2*pi;
		286
9.072	20988000	287 del = obj.len/obj.NumCells; %a in the book
		288

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289 %           ex = zeros(BxnSize,1);
290 %           ey = zeros(BynSize,1);
291
292 %have to update seperately, because may be different sizes
293 %onces we zero out cells.
1.207 20988000 294 phiLoc = phiInc;
1.945 20988000 295 thetaLoc = thetaInc;
296 %there are 2 random /pi both inside sinc( ) and outside because
297 %matlab defines sinc(x) = sin(pi x)/pi x and I want sin(x)/x...
298 %note: %sinc(x) = sin(pi x)/ pi x
299 %kk/(2*pi) = 1 -> what happened to kk, /2, /pi
300 %ie) yes sarah its del/2 but /2 cancelled out
301
625.488 20988000 302 ex_theta = del * (cos(thetaLoc)*cos(phiLoc))...
20988000 303 * sinc(del*sin(thetaLoc)*cos(phiLoc))...
20988000 304 * exp(1j*kk*(obj.Bxn_xx*sin(thetaLoc)*cos(phiLoc)...
20988000 305 +obj.Bxn_yy*sin(thetaLoc)*sin(phiLoc)));
533.333 20988000 306 ey_theta =del * (cos(thetaLoc)*sin(phiLoc))...
20988000 307 * sinc(del*sin(thetaLoc)*sin(phiLoc))...
20988000 308 * exp(1j*kk*(obj.Byn_xx*sin(thetaLoc)*cos(phiLoc)...
20988000 309 +obj.Byn_yy*sin(thetaLoc)*sin(phiLoc)));
310
311 %now phi
507.982 20988000 312 ex_phi = del * (-sin(phiLoc))...
20988000 313 * sinc(del*sin(thetaLoc)*cos(phiLoc))...
20988000 314 * exp(1j*kk*(obj.Bxn_xx*sin(thetaLoc)*cos(phiLoc)...
20988000 315 +obj.Bxn_yy*sin(thetaLoc)*sin(phiLoc)));
517.879 20988000 316 ey_phi = del * (cos(phiLoc))...
20988000 317 * sinc(del*sin(thetaLoc)*sin(phiLoc))...
20988000 318 * exp(1j*kk*(obj.Byn_xx*sin(thetaLoc)*cos(phiLoc)...
20988000 319 +obj.Byn_yy*sin(thetaLoc)*sin(phiLoc)));
320 %---- get ZZ -----
321 %this is right so want to save it 0_0
322 %           ex = del * (cos(thetaLoc)*cos(phiLoc)-sin(phiLoc))...
323 %           * sinc(del*sin(thetaLoc)*cos(phiLoc))...
324 %           * exp(1j*kk*(obj.Bxn_xx*sin(thetaLoc)*cos(phiLoc)...
325 %           +obj.Bxn_yy*sin(thetaLoc)*sin(phiLoc)));
326 %           ey =del * (cos(thetaLoc)*sin(phiLoc)+cos(phiLoc))...
327 %           * sinc(del*sin(thetaLoc)*sin(phiLoc))...
328 %           * exp(1j*kk*(obj.Byn_xx*sin(thetaLoc)*cos(phiLoc)...
329 %           +obj.Byn_yy*sin(thetaLoc)*sin(phiLoc)));
330 %
331 %
332 %
107.928 20988000 333 obj.EE_theta = [ex_theta ey_theta].'; %update EE and make col vector
63.851 20988000 334 obj.EE_phi = [ex_phi ey_phi].';
1782.978 20988000 335 obj.JJ_theta = obj.ZZinv*obj.EE_theta/obj.scaleFactor; %update JJ
1726.343 20988000 336 obj.JJ_phi = obj.ZZinv*obj.EE_phi/obj.scaleFactor; %update JJ
31.444 20988000 337 end

```

Local functions in this file are not included in this listing.