

MathWorks

MATLAB® & SIMULINK®

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MATLAB EXPO 2014 FRANCE

2 Octobre – Hôtel Novotel Tour Eiffel, Paris

MathWorks vous invite à la première
MATLAB EXPO française qui se tiendra
Jeudi 2 Octobre 2014 à Paris.

Agenda et inscription :
matlabexpo.fr



MATLAB 1984 Capabilities

ABS	ANS	ATAN	BASE	CHAR	CHOL	CHOP	CLEA	COND	CONJ	COS
DET	DIAG	DIAR	DISP	EDIT	EIG	ELSE	END	EPS	EXEC	EXIT
EXP	EYE	FILE	FLOP	FLPS	FOR	FUN	HESS	HILB	IF	IMAG
INV	KRON	LINE	LOAD	LOG	LONG	LU	MACR	MAGI	NORM	ONES
ORTH	PINV	PLOT	POLY	PRIN	PROD	QR	RAND	RANK	RCON	RAT
REAL	RETU	RREF	ROOT	ROUN	SAVE	SCHU	SHOR	SEMI	SIN	SIZE
SQRT	STOP	SUM	SVD	TRIL	TRIU	USER	WHAT	WHIL	WHO	WHY

< > () = . , ; \ / ' + - * :

- 80 built-in functions
- No MATLAB (.M) files or toolboxes

MATLAB 2014 Capabilities

traveling wave

speed of sound: 1500 m/s

xy - array parameters

x-elements: 4
 x-element spacing: 0.0005 m
 x phase shift: 0 deg
 # y-elements: 4
 y-element spacing: 0.0005 m
 y phase shift: 0 deg

rectangular patch parameters

x-dimensions: 0.0004 m
 y-dimensions: 0.0004 m

attenuation Ideal
impedance Ideal

far field calculate & plot

reset to BSCT #

Sphere analysis range: 300° / 180°

-3dB reference: intensity / pressure

Half power bandwidth (main lobe) [°]: 32.4

Green: 100%
 Blue: Removable
 Red: 0%
 Yellow: Selected

Cyan: Monopole
 green: Rectangular Patch
 blue: XY-Array
 red: total

Image Tool 1 - street.jpg

File Tools Window Help

Directivity pattern XY-ARRAY (= grouping)

Directivity pattern RECT. PATCH (= surface of single element)

Directivity pattern of entire arrangement

Directivity pattern C_{xy} vertical (phi = azimuth = 0°)

Directivity pattern C_{xy} horizontal (theta = elevation = 90°)

Identify Helicopter Recordings

Report Help

Unidentified Recording Number: 1
 Track Position: 1

Play Identify

Identify:

Blade Passage Frequency: 21.32 Hz
 Name: osprey

Identified Recording Reference Recording

Frequency (Hz)

MATLAB R2014a

HOME PLOTS APPS EDITOR PUBLISH VIEW

Find Files Insert % fx
 Comment %
 Indent %
 Go To %
 Find %
 Breakpoints %
 Run Run and Advance Run and Time

Workspace

Name	Value
ans	4x4 double
D	128x128 dou
P	128x128 dou

Editor - C:\Program Files\MATLAB\R2014a\toolbox\matlab\demos\penny.m

```

penny.m
29 % four neighbors and dark if its height is less than the average of its
30 % neighbors. This is an unusual "lighting model", but it produces an i
31 % that looks like a photograph of a penny.
32
33 D = -del2(P);
34 pcolor(D)
35 axis ij square
36 shading flat
37
38
39 %% Drawing a Surface Plot With a Colormap
    
```

Command Window

New to MATLAB? Watch this Video, see Examples, or read Getting Started.

```

-2.7500 17.7500
 0.7500  9.7500
 0.5000  1.0000
-0.2500  0.2500
-0.7500   0
    
```

>> view

ans =

```

1.0000  0  0 -0.5000
    
```

Ln 40 Col 60

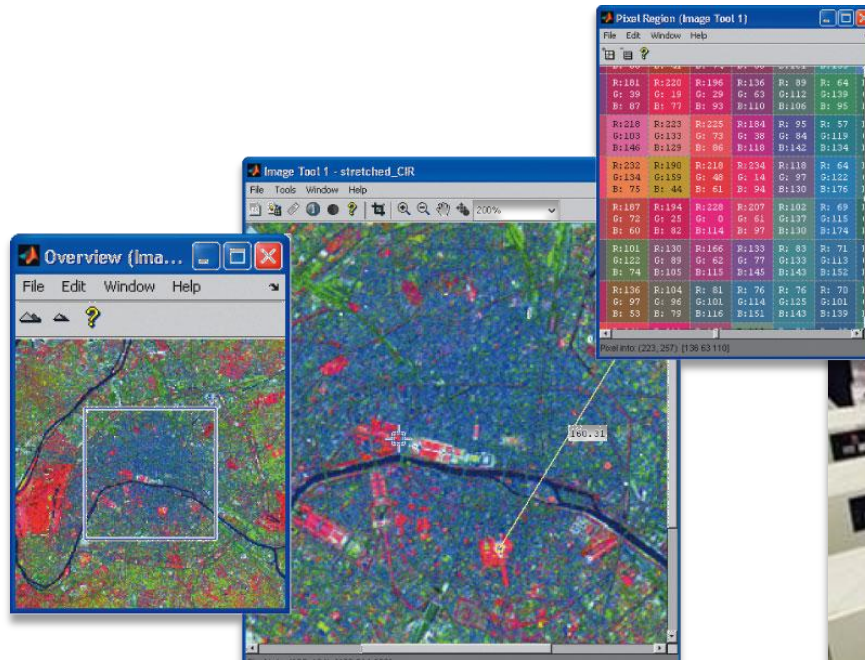
Plot: Step Response: Reference tracking

Response time: 6.12 seconds

Slower Faster

Computation-Intensive R&D

- Terabyte-sized datasets
- Exploding computing power from multicore, clusters, clouds



New Compute Platforms: Bigger is Better

