

# Tutorial on SAR, InSAR, PSInSAR

## SARPROZ

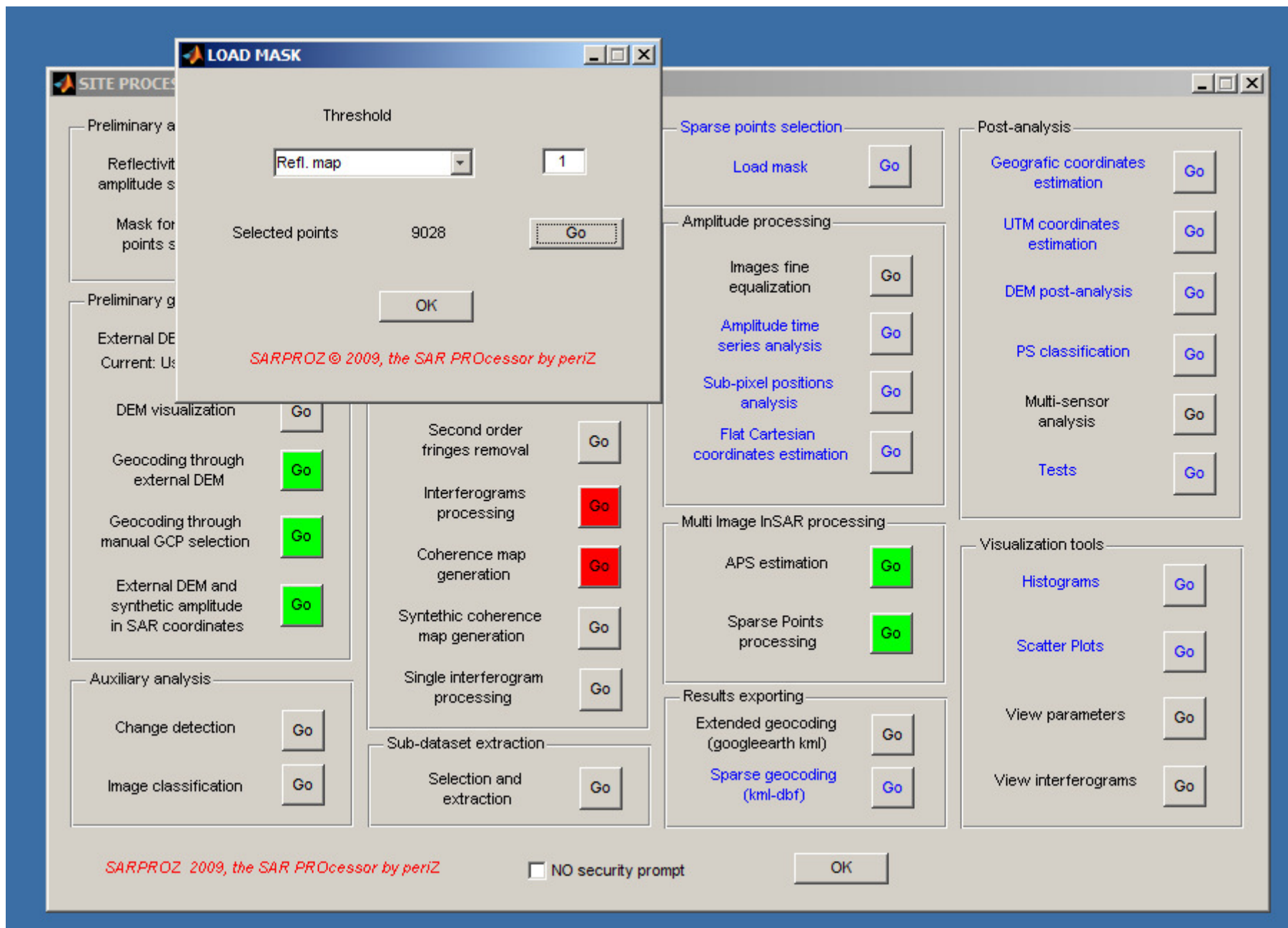
### The SAR processing tool by Periz

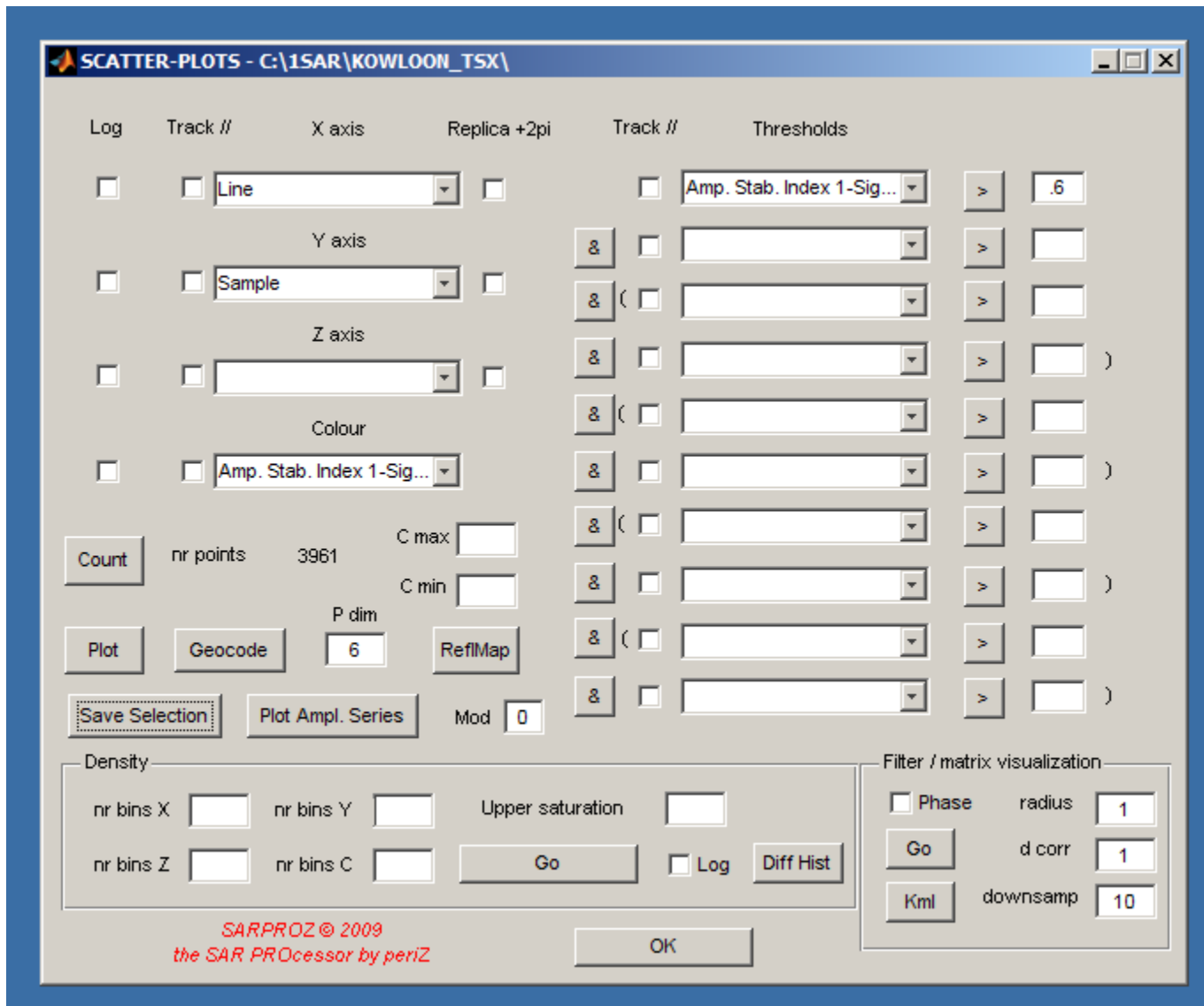
[http://ihome.cuhk.edu.hk/~b122066/index\\_files/download.htm](http://ihome.cuhk.edu.hk/~b122066/index_files/download.htm)

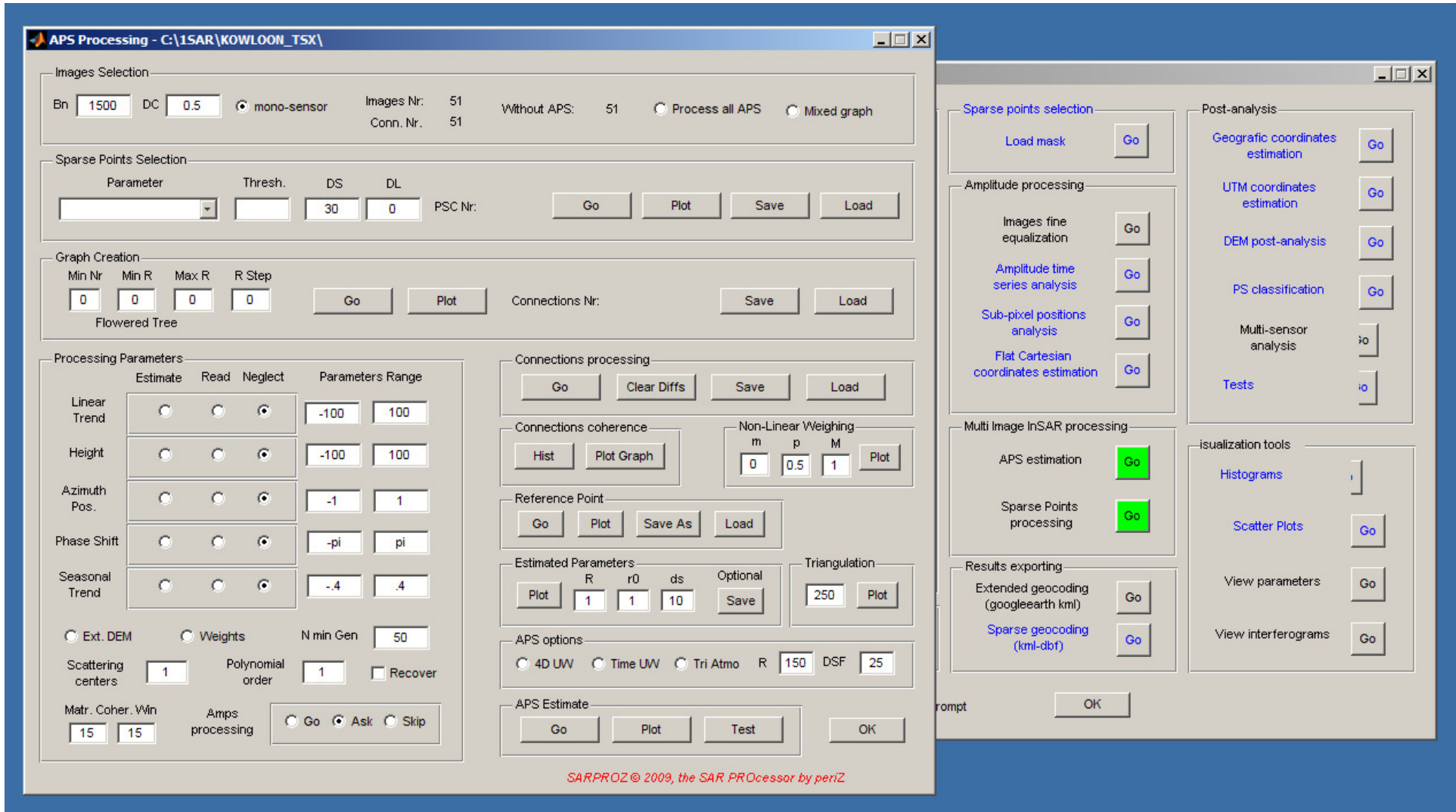
#### Part VI

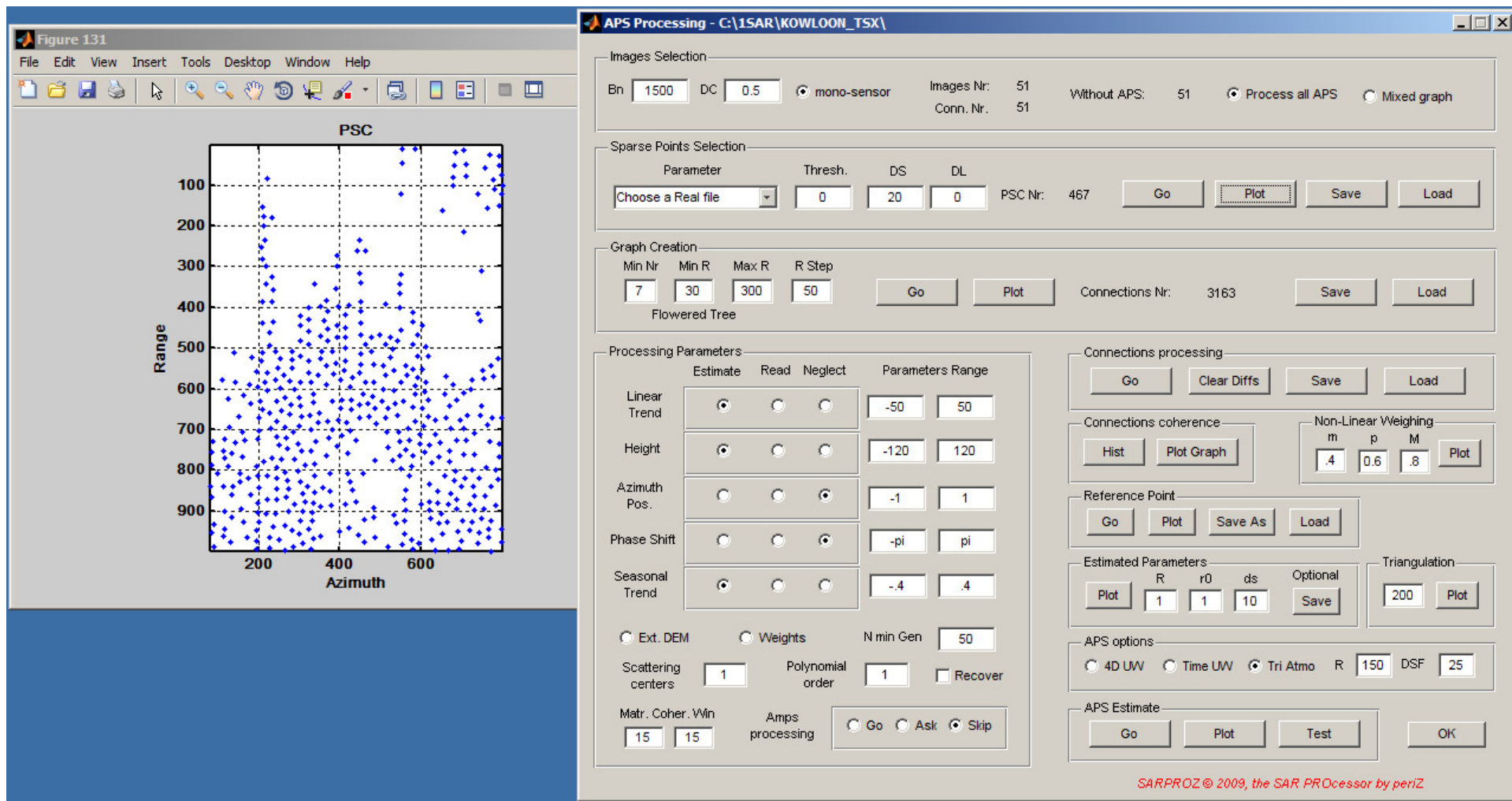
Petronas University of Technology UTP

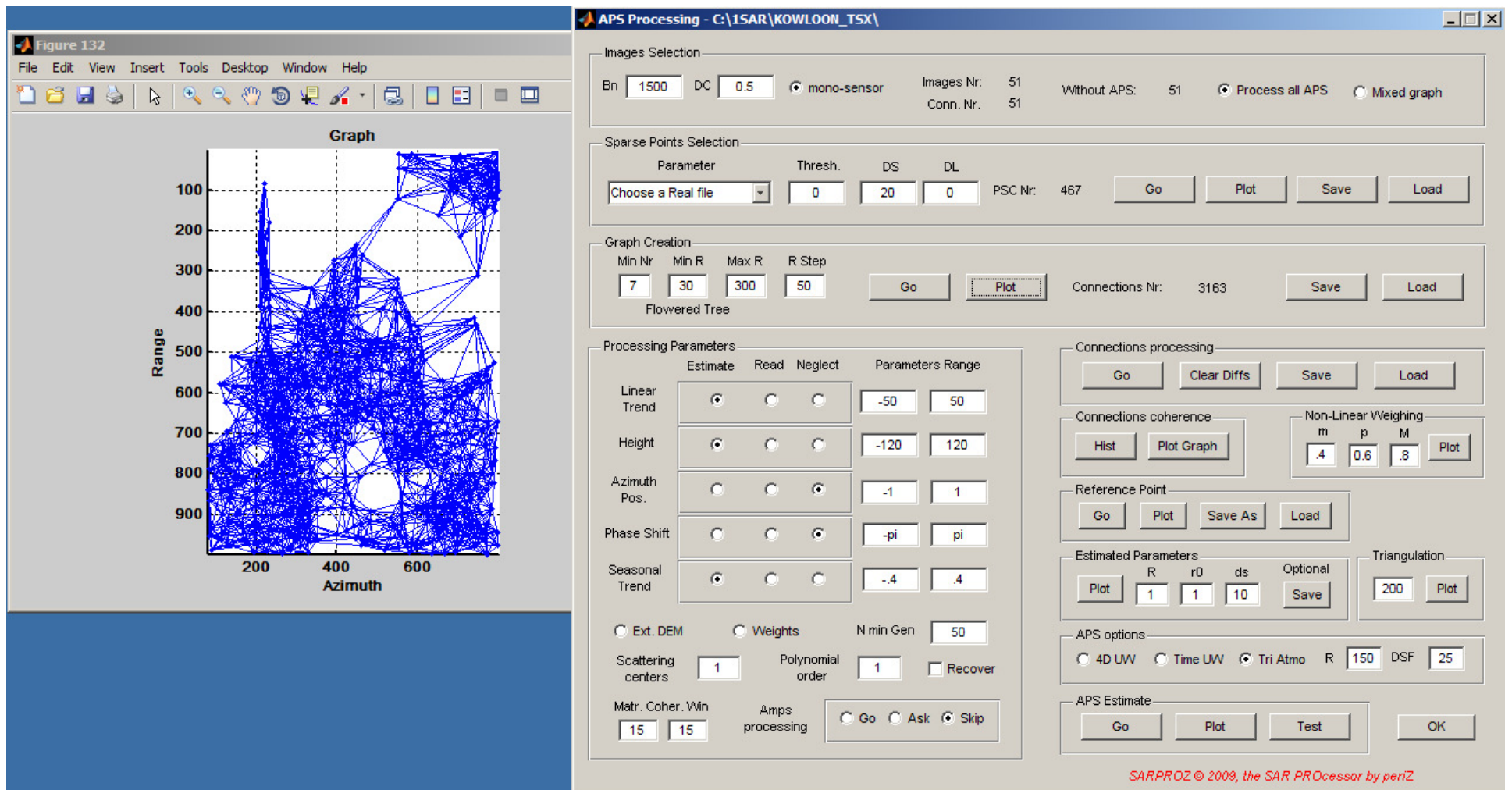
# PS analysis













Images Selection

Bn  DC   mono-sensor Images Nr: 51 Without APS: 51  Process all APS  Mixed graph  
 Conn. Nr. 51

Sparse Points Selection

Parameter Thresh. DS DL PSC Nr: 467

Graph Creation

Min Nr Min R Max R R Step Connections Nr: 3163

Flowered Tree

Processing Parameters

	Estimate	Read	Neglect	Parameters Range	
Linear Trend	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value="-50"/>	<input type="text" value="50"/>
Height	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value="-120"/>	<input type="text" value="120"/>
Azimuth Pos.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="text" value="-1"/>	<input type="text" value="1"/>
Phase Shift	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="text" value="-pi"/>	<input type="text" value="pi"/>
Seasonal Trend	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text" value="-4"/>	<input type="text" value="4"/>

Ext. DEM  Weights N min Gen

Scattering centers  Polynomial order   Recover

Matr. Coher. Win   Amps processing  Go  Ask  Skip

Connections processing

Connections coherence

Non-Linear Weighing

m p M

Reference Point

Estimated Parameters

R  r0  ds  Optional

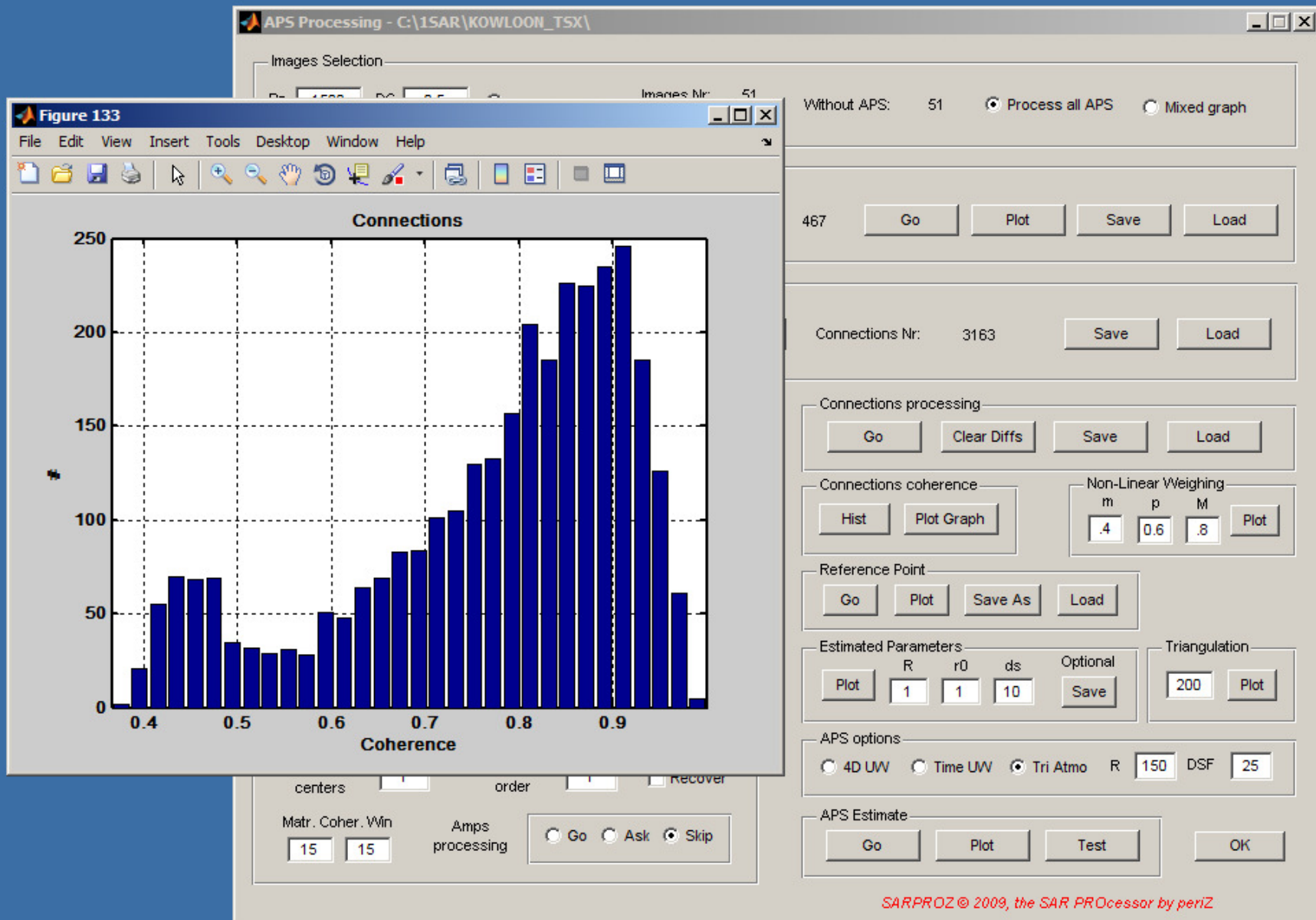
Triangulation

APS options

4D UW  Time UW  Tri Atmo R  DSF

APS Estimate





APS Processing - C:\1SAR\KOWLOON\_TSX\

Images Selection

Bn  DC   mono-sensor Images Nr: 51 Without APS: 51  Process all APS  Mixed graph  
 Conn. Nr. 51

Sparse Points Selection

467

Connections Nr: 3163

Connections processing

Connections coherence

Non-Linear Weighing

m p M

Reference Point

Estimated Parameters

R r0 ds Optional

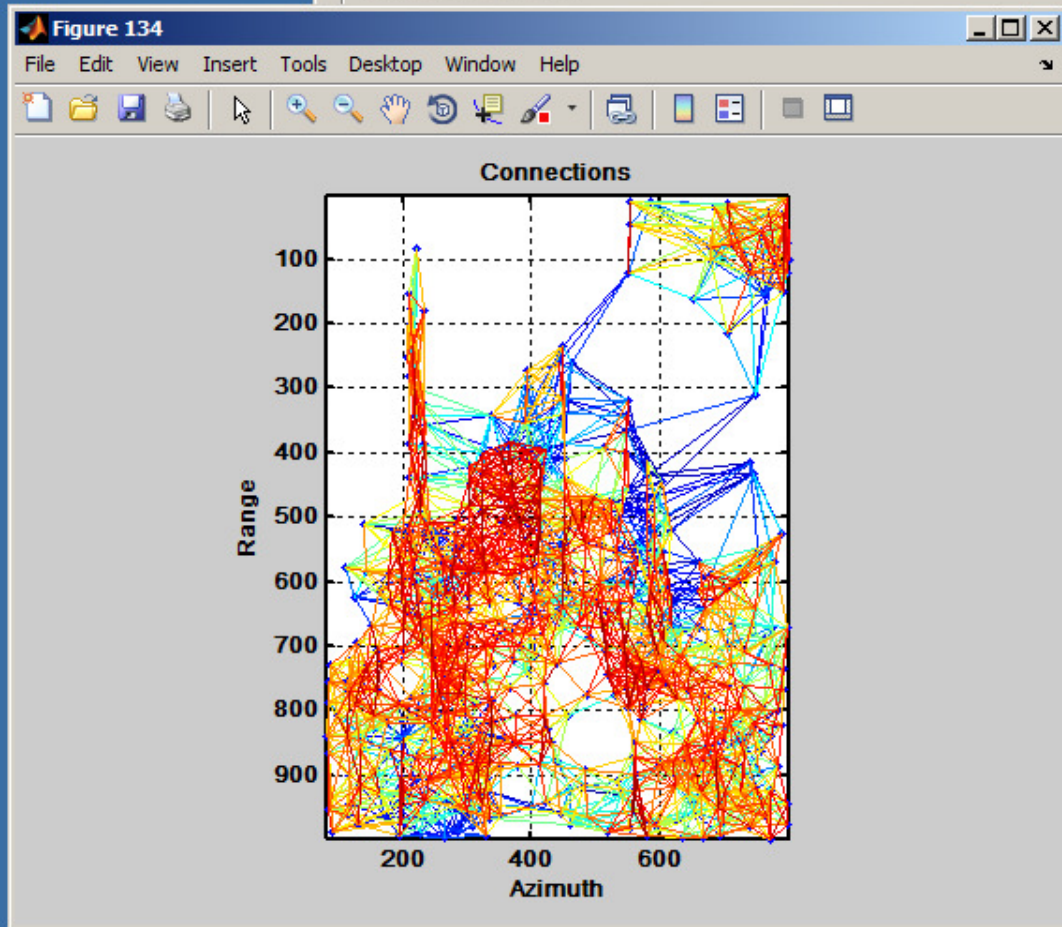
Triangulation

APS options

4D UW  Time UW  Tri Atmo R  DSF

APS Estimate

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APS Processing - C:\1SAR\KOWLOON\_TSX\

Images Selection  
 Bn 1500 DC 0.5  mono-sensor Images Nr: 51  
 Without APS: 51  Process all APS  Mixed graph

467 [Go] [Plot] [Save] [Load]

Connections Nr: 3163 [Save] [Load]

Connections processing  
 [Go] [Clear Diffs] [Save] [Load]

Connections coherence  
 [Hist] [Plot Graph]

Non-Linear Weighing  
 m p M [Plot]  
 4 0.6 .8

Reference Point  
 [Go] [Plot] [Save As] [Load]

Estimated Parameters  
 Plot R r0 ds Optional  
 1 1 10 Save

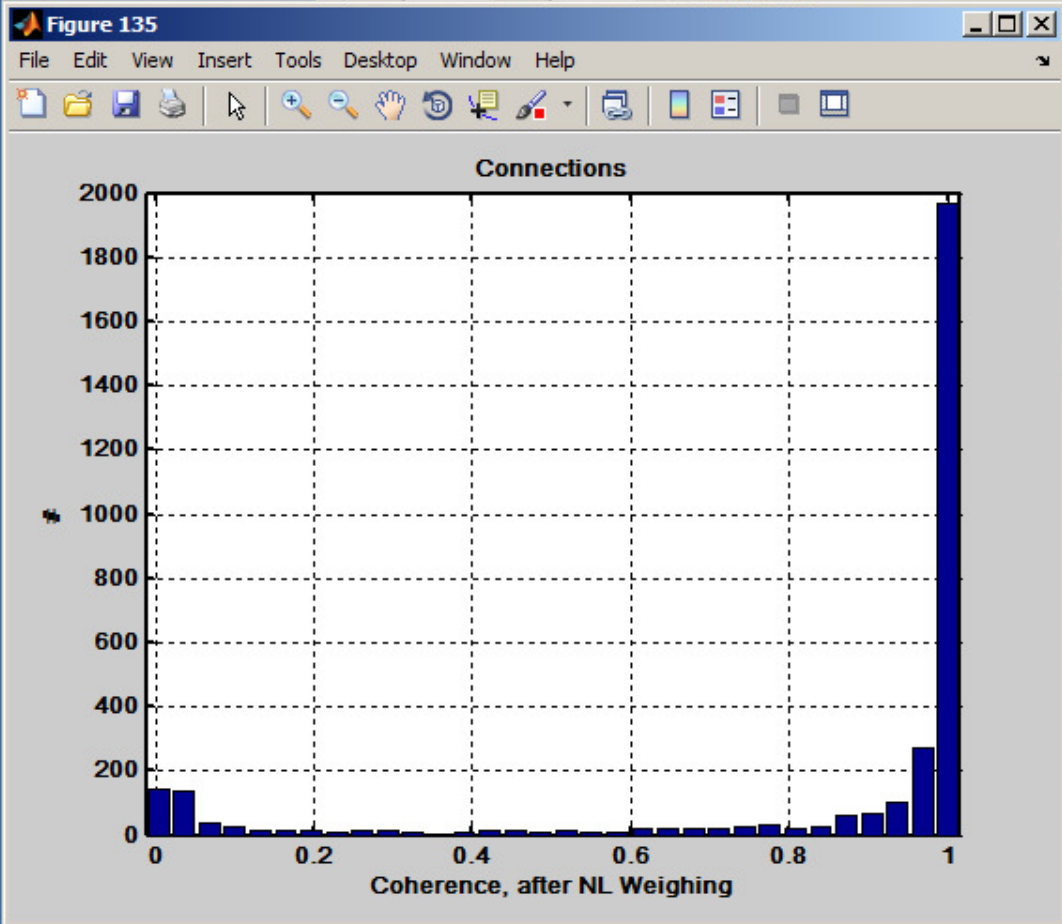
Triangulation  
 200 [Plot]

APS options  
 4D UW  Time UW  Tri Atmo R 150 DSF 25

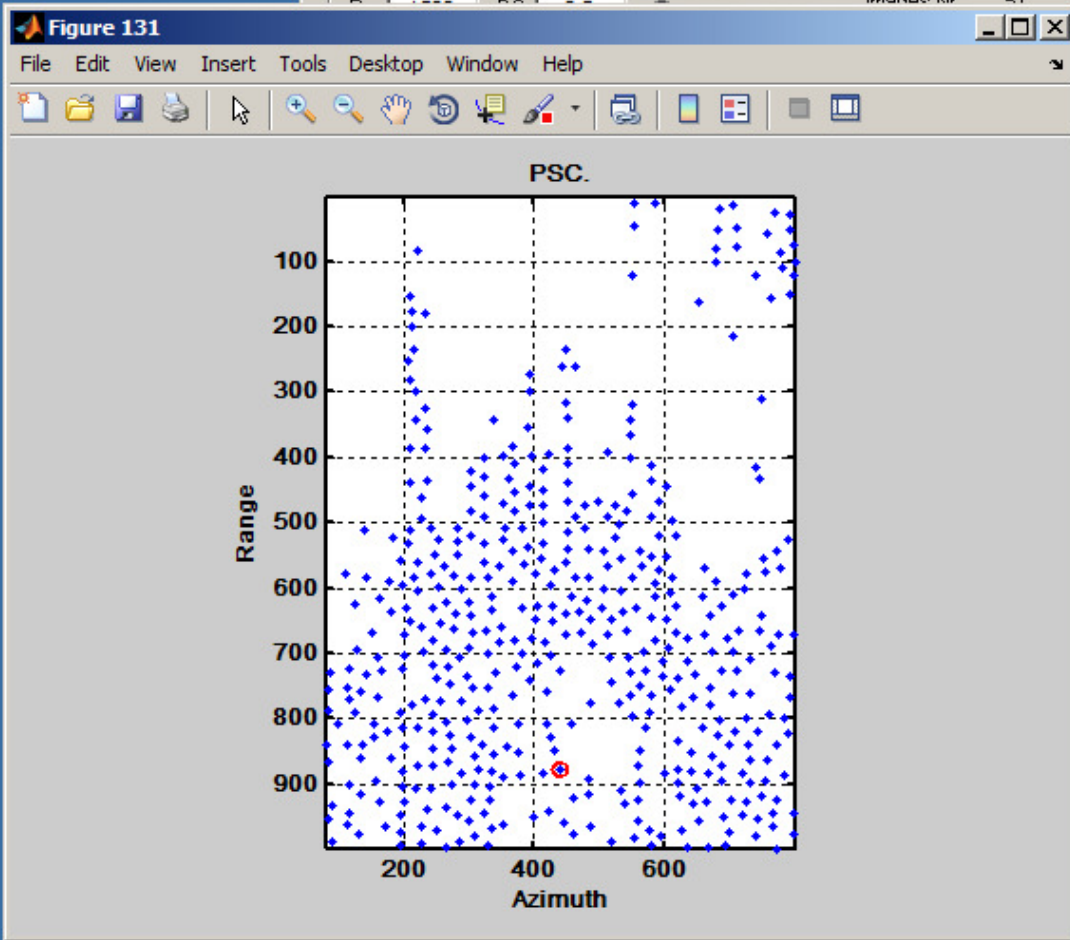
APS Estimate  
 [Go] [Plot] [Test] [OK]

Matr. Coher. Win Amps processing  
 15 15  Go  Ask  Skip

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APS Processing - C:\1SAR\KOWLOON\_TSX\



Without APS: 51  Process all APS  Mixed graph

467

Connections Nr: 3163

Connections processing

Connections coherence

Non-Linear Weighing  
m p M   
[.4] [0.6] [.8]

Reference Point

Estimated Parameters  R r0 ds Optional   
[1] [1] [10]

Triangulation

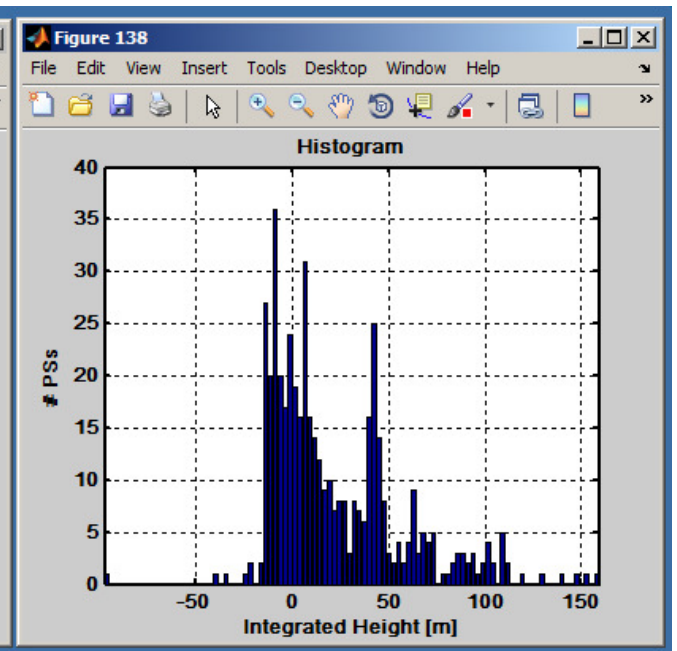
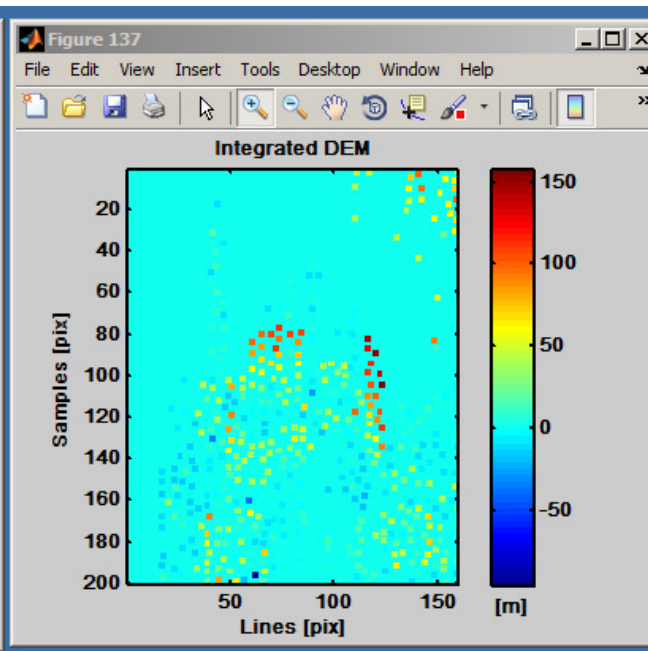
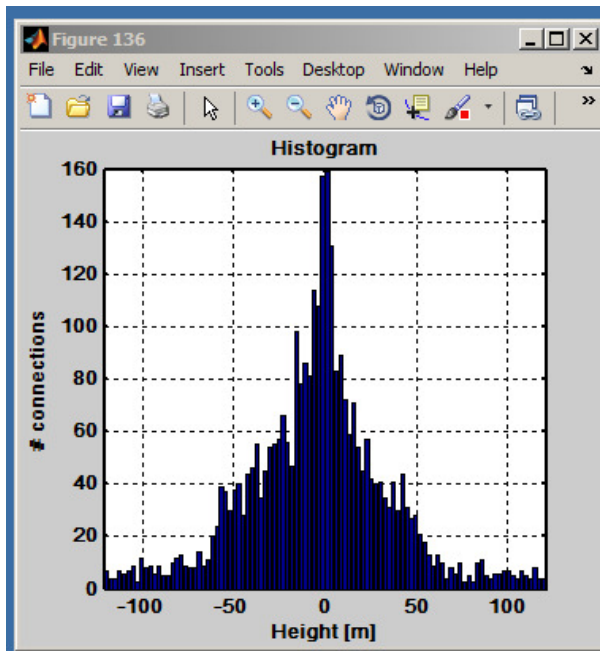
APS options  4D UW  Time UW  Tri Atmo R [150] DSF [25]

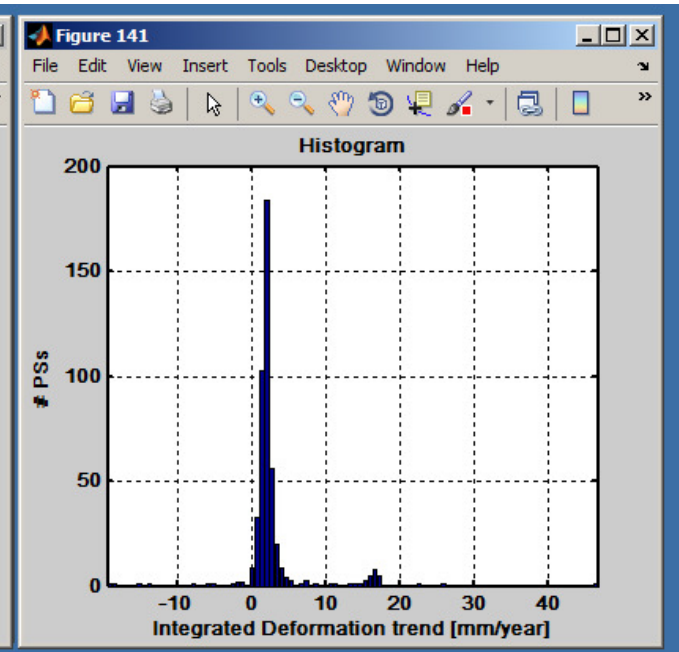
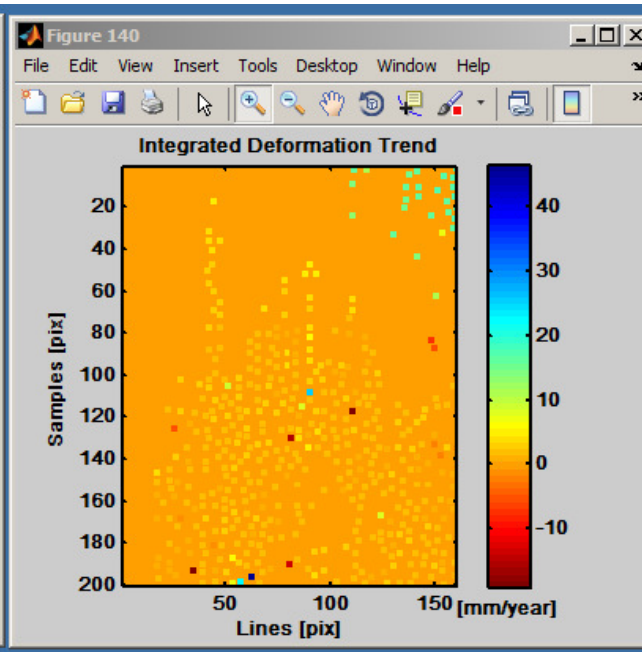
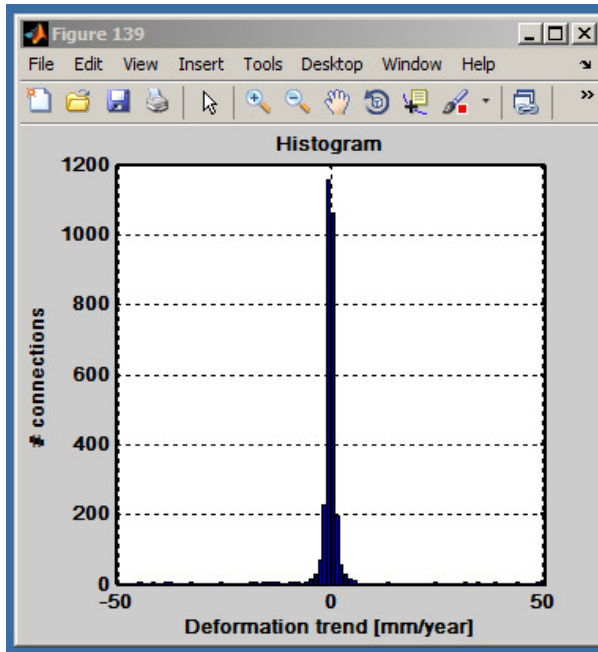
APS Estimate

centers  order   Recover

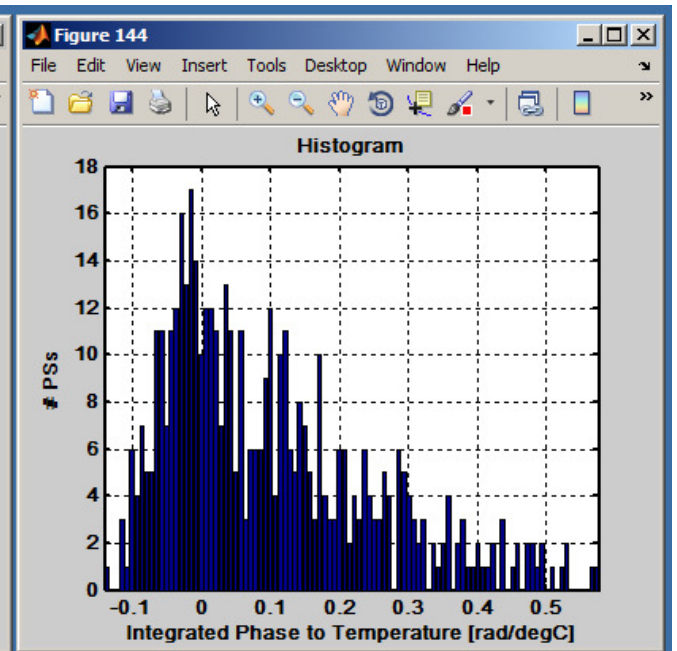
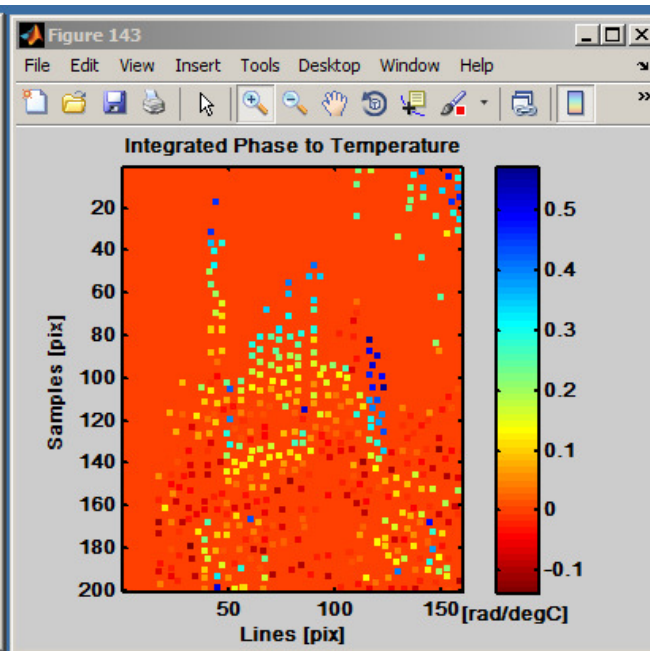
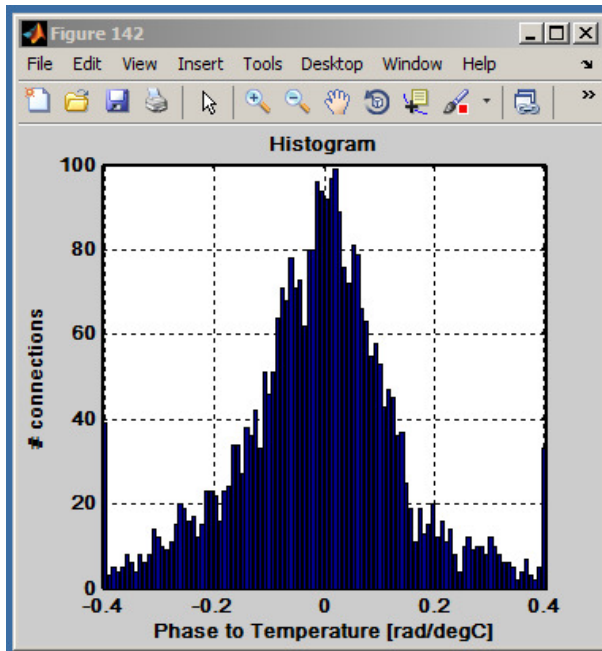
Matr. Coher. Win  [15]  [15] Amps processing  Go  Ask  Skip











APS Processing - C:\1SAR\KOWLOON\_TSX\

Images Selection

**Figure 151**

File Edit View Insert Tools Desktop Window Help

Without APS: 51  Process all APS  Mixed graph

467

Connections Nr: 3163

Connections processing

Connections coherence

Non-Linear Weighing

m	p	M	<input type="button" value="Plot"/>
.4	0.6	.8	

Reference Point

Estimated Parameters

<input type="button" value="Plot"/>	R	r0	ds	Optional
	1	1	5	<input type="button" value="Save"/>

Triangulation

APS options

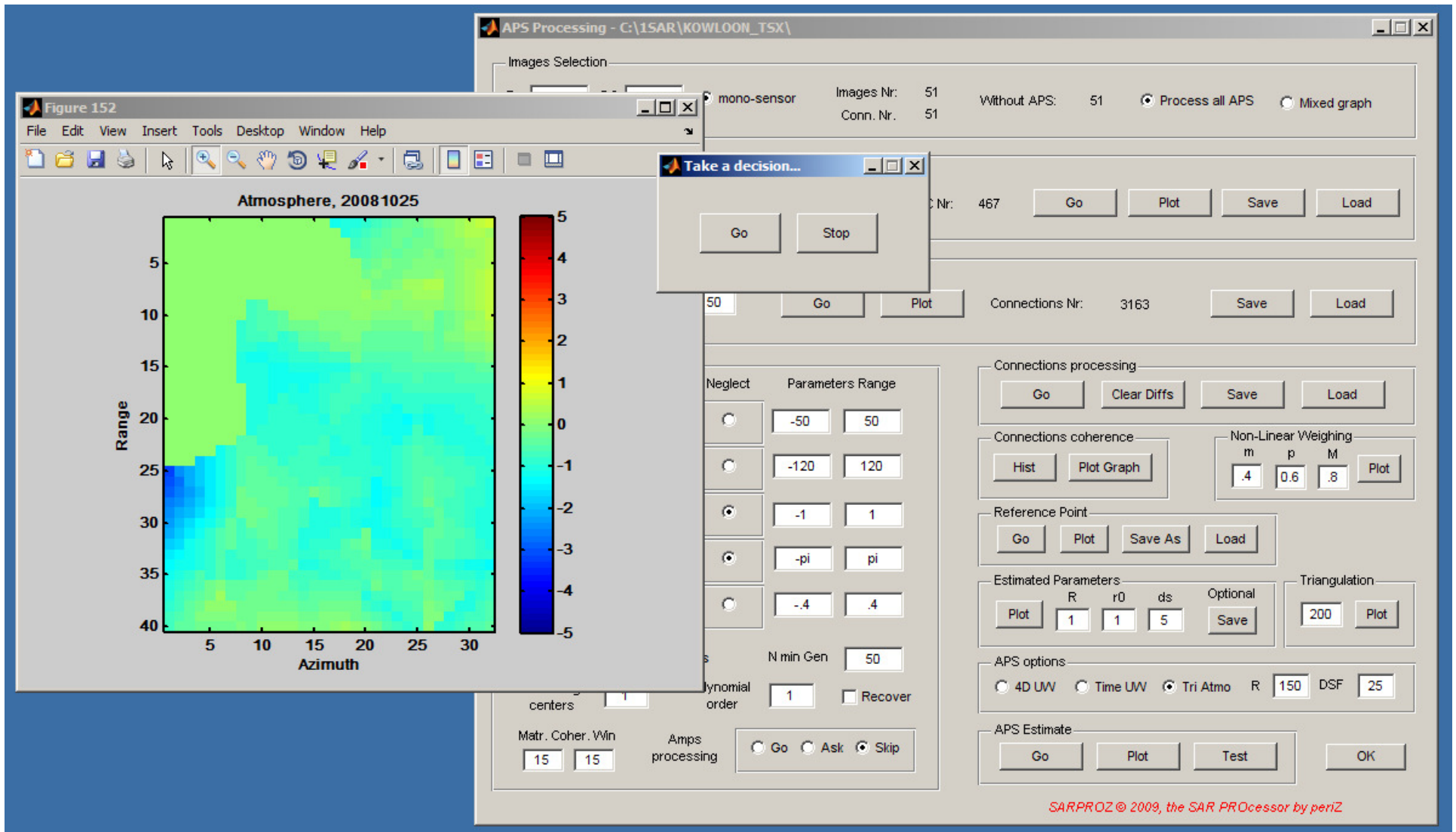
4D UW  Time UW  Tri Atmo R  DSF

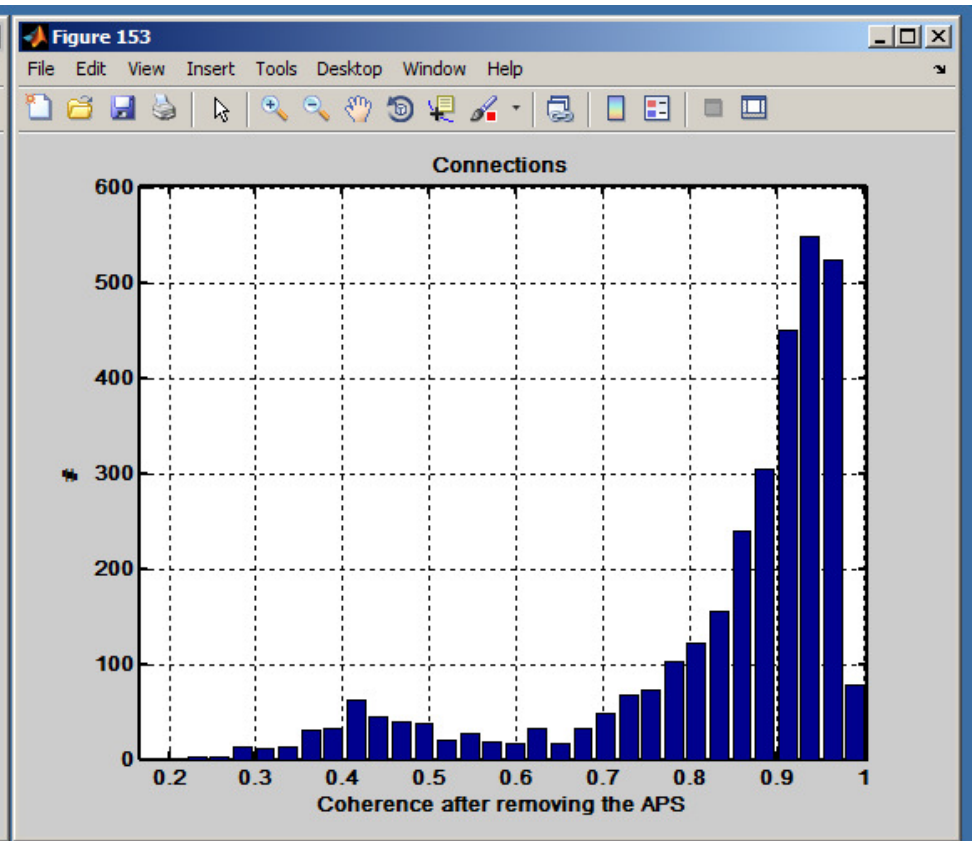
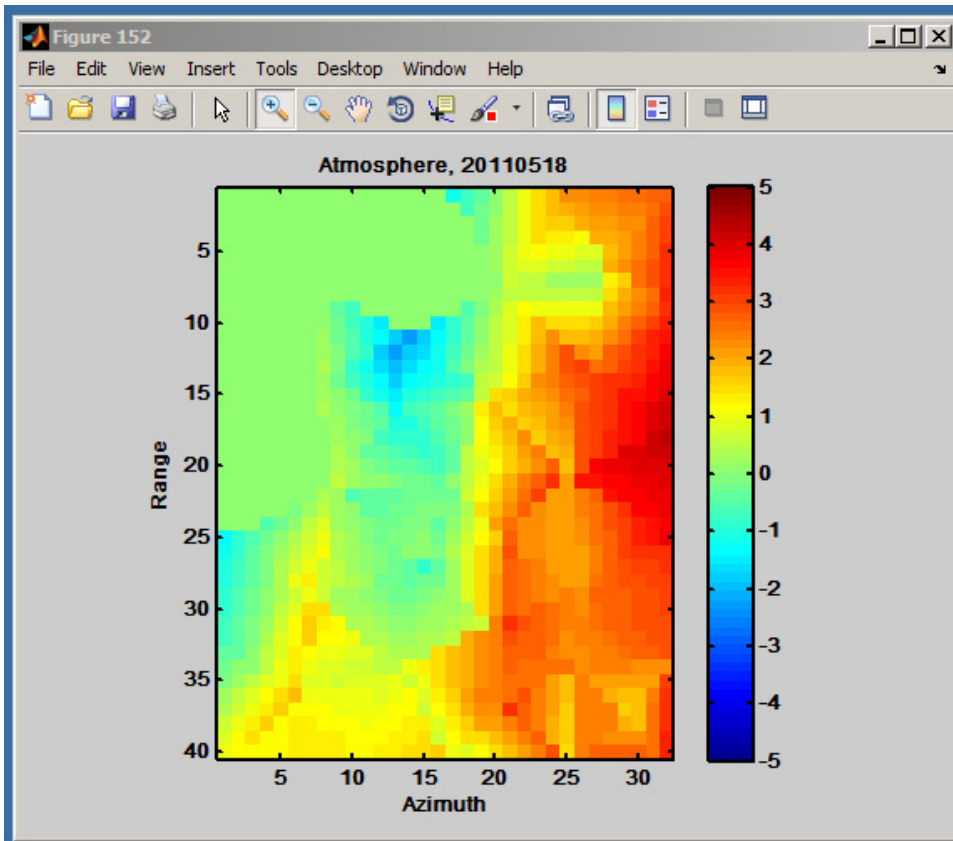
APS Estimate

Scattering centers  Polynomial order   Recover

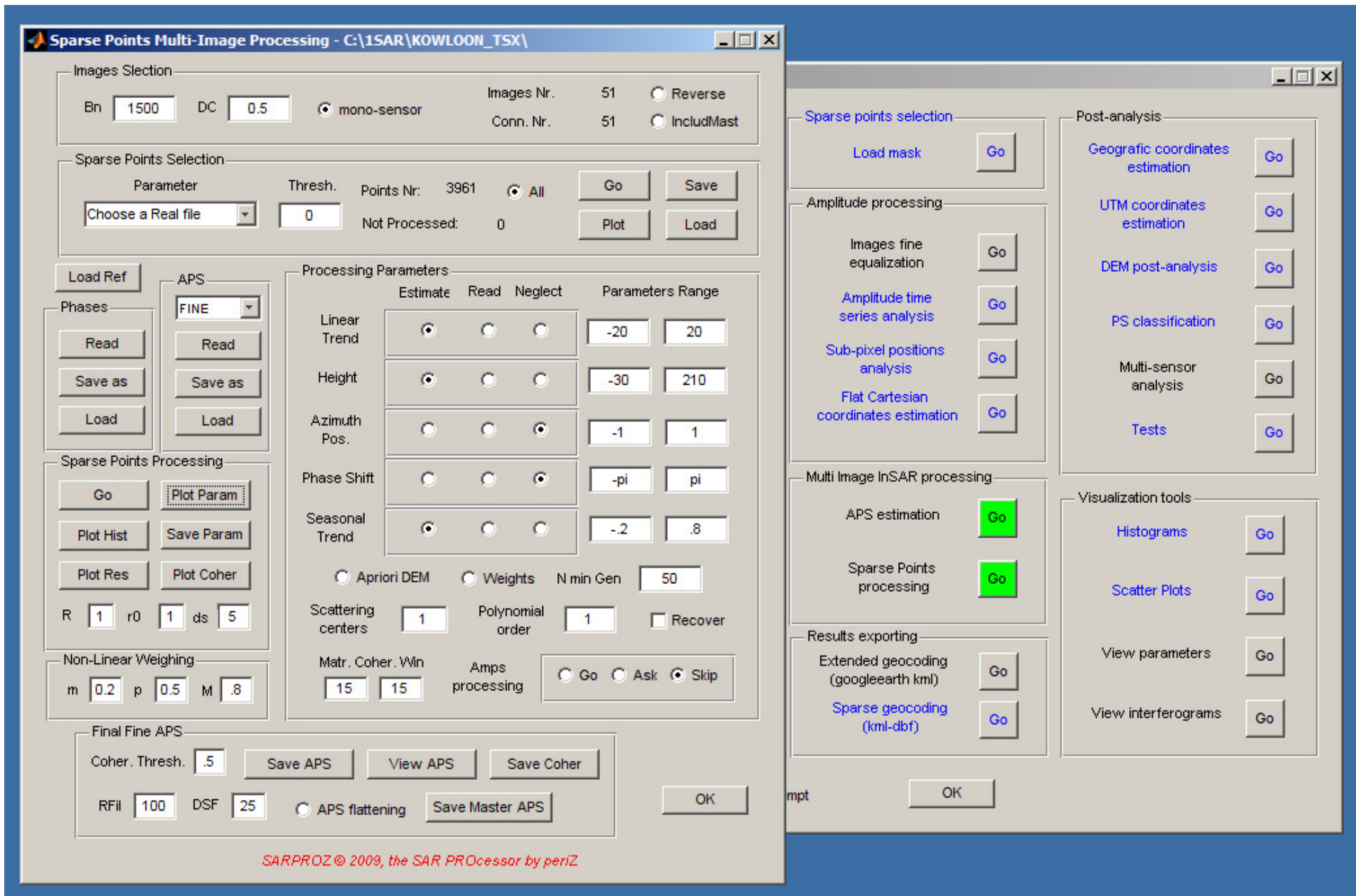
Matr. Coher. Win   Amps processing  Go  Ask  Skip

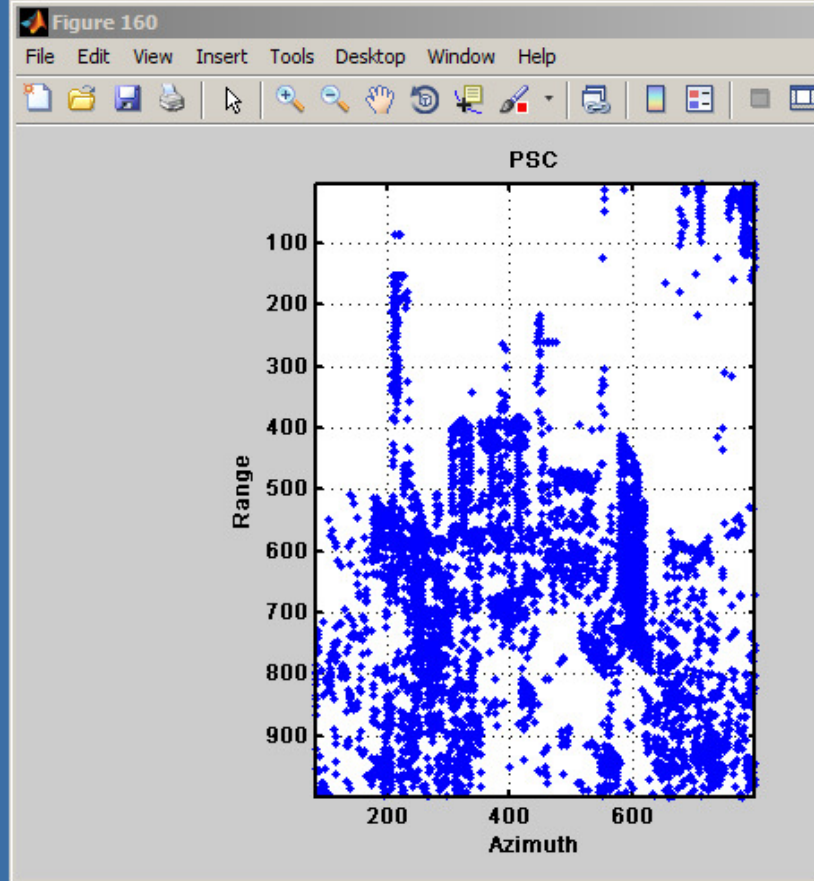
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**Sparse Points Multi-Image Processing - C:\15AR\KOWLOON\_TSX\**

Images Selection  
 Bn: 1500 DC: 0.5  mono-sensor Images Nr.: 51  Reverse  
 Conn. Nr.: 51  IncludMast

Sparse Points Selection  
 Parameter: Choose a Real file Thresh.: 0 Points Nr.: 3961  All  
 Not Processed: 0

Load Ref  APS: TRIANG.

Phases:

Sparse Points Processing

R: 1 r0: 1 ds: 5

Non-Linear Weighing  
 m: 0.2 p: 0.5 M: .8

Processing Parameters

	Estimate	Read	Neglect	Parameters Range	
Linear Trend	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	-20	20
Height	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	-30	210
Azimuth Pos.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	-1	1
Phase Shift	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	-pi	pi
Seasonal Trend	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	-2	.8

Apriori DEM  Weights N min Gen: 50

Scattering centers: 1 Polynomial order: 1  Recover

Matr. Coher. Win: 15 15 Amps processing:  Go  Ask  Skip

Final Fine APS  
 Coher. Thresh.: .5     
 Rfil: 100 DSF: 25  APS flattening

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Sparse Points Multi-Image Processing - C:\15AR\KOWLOON\_TSX\

Images Selection  
Bn  DC   mono

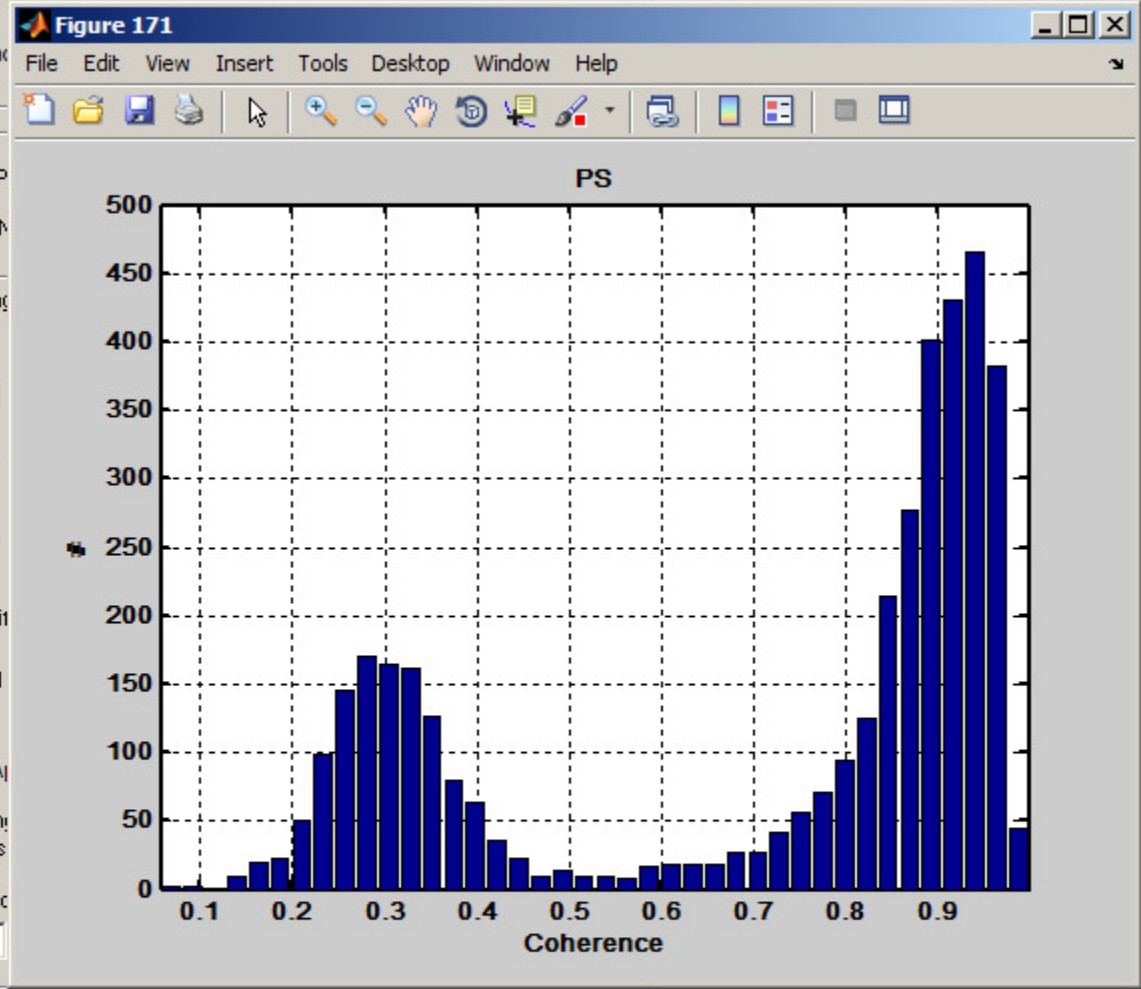
Sparse Points Selection  
Parameter  Thresh.

Load Ref  
Phases  
  
  
  
APS  
TRIANG.

Sparse Points Processing  
   
   
   
R  r0  ds

Non-Linear Weighing  
m  p  M

Final Fine APS  
Coher. Thresh.      
Rfil  DSF   APS flattening



Sparse Points Multi-Image Processing - C:\1SAR\KOWLOON\_TSX\

Images Selection  
Bn  DC

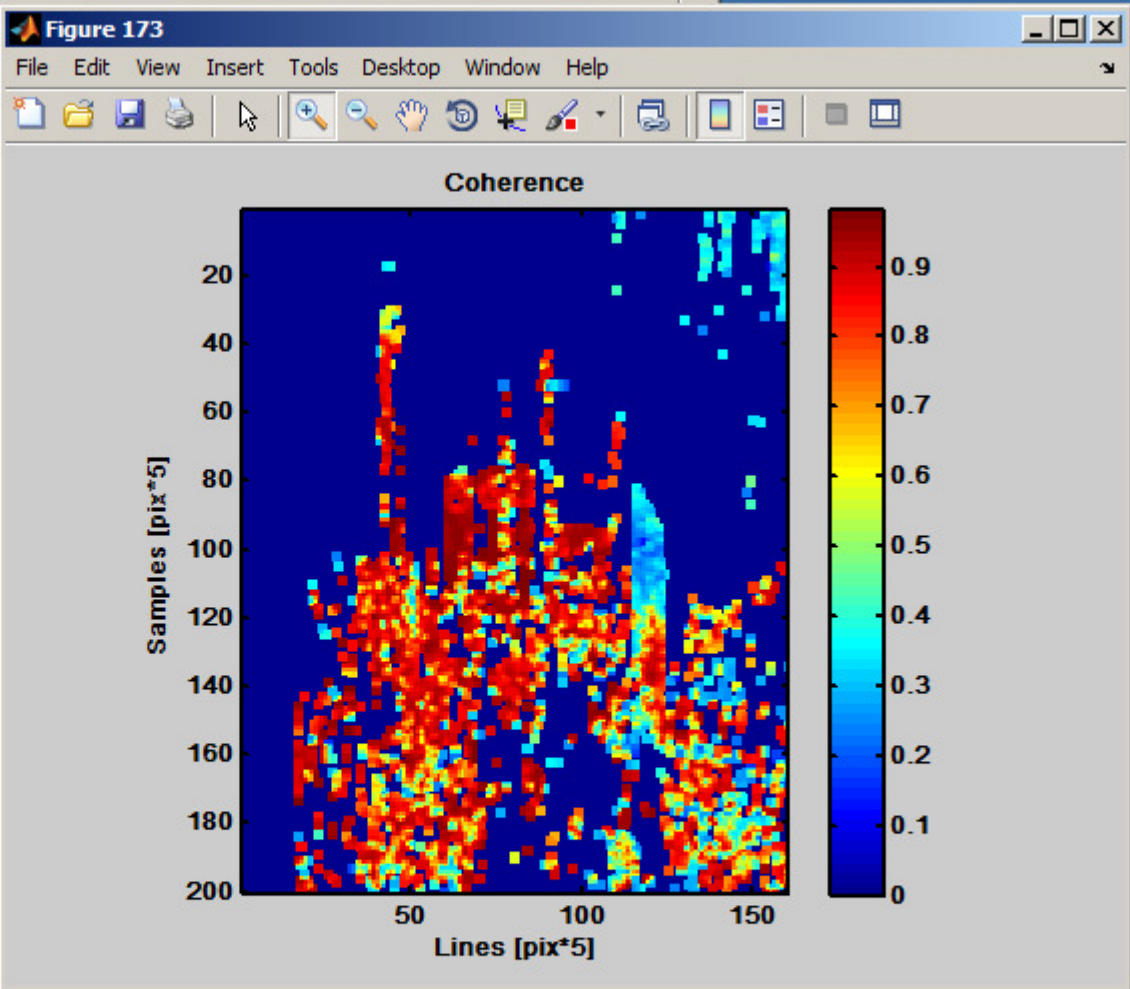
Sparse Points Selection  
Parameter  Thre

Load Ref   
Phases     
APS     
TRIANG.

Sparse Points Processing  
   
   
   
R  r0  ds

Non-Linear Weighing  
m  p  M

Final Fine APS  
Coher. Thresh.      
Rfil  DSF   APS flattening



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