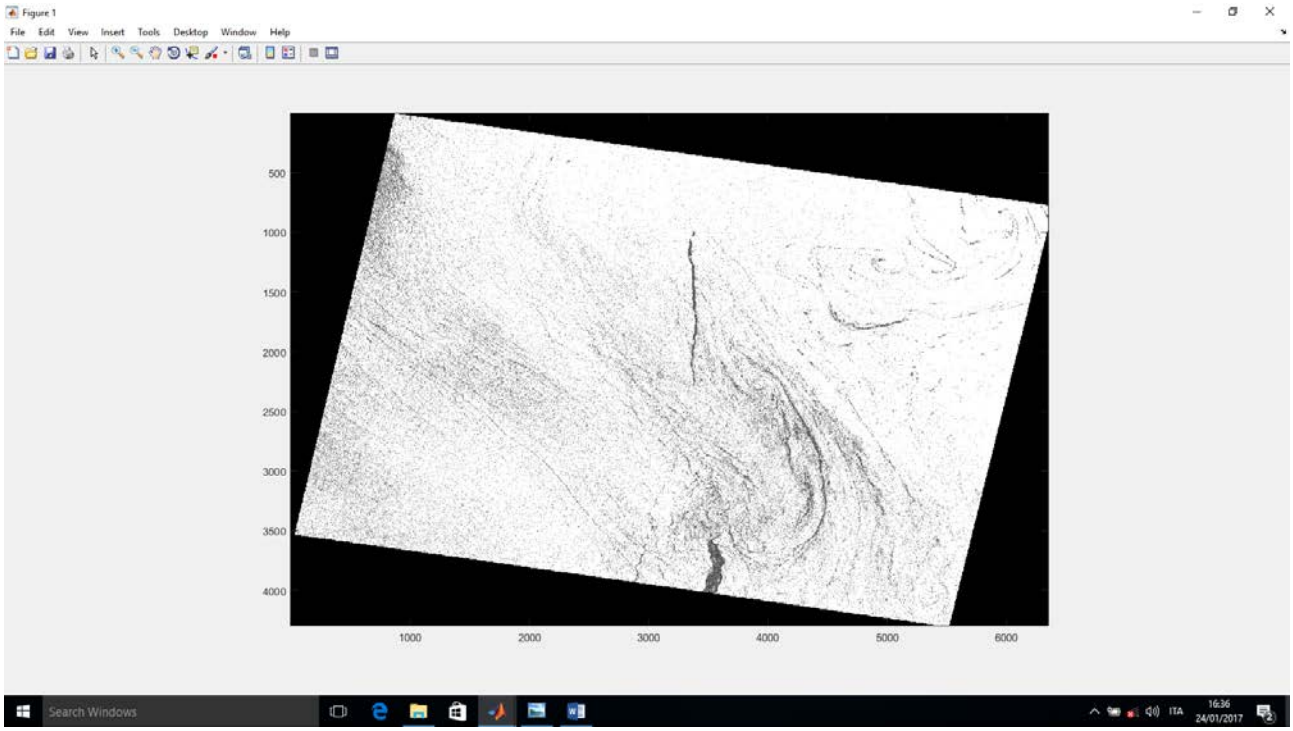
Test_tirocinio

Full frame
NameSAT='S1A_IW_SLC__1SDV_20150815T051150_20150815T051213_007269_009F59_D98D.zip_Orb_Calib_TOPSARdeb_Subset01_spkle_TC_LSmask'

Il dato sigma0 lineare è contenuto nella 1 banda

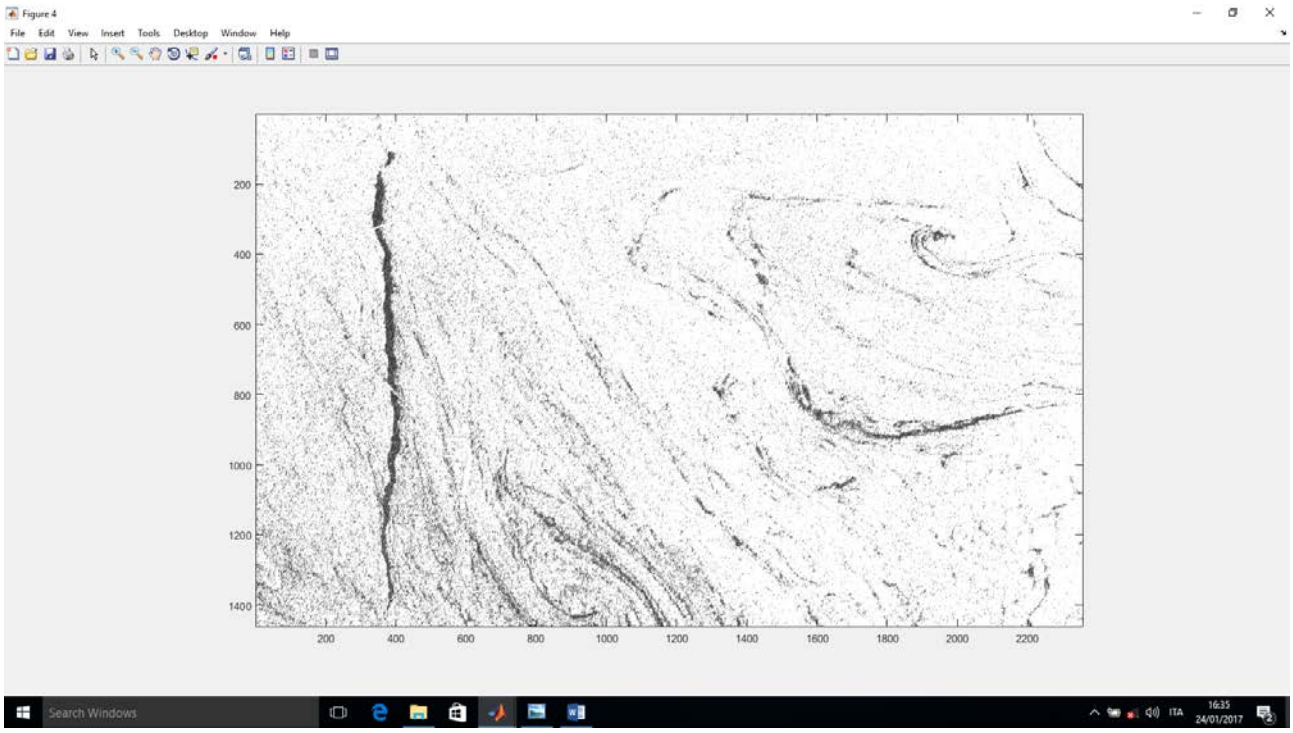
Sigma0 lineare



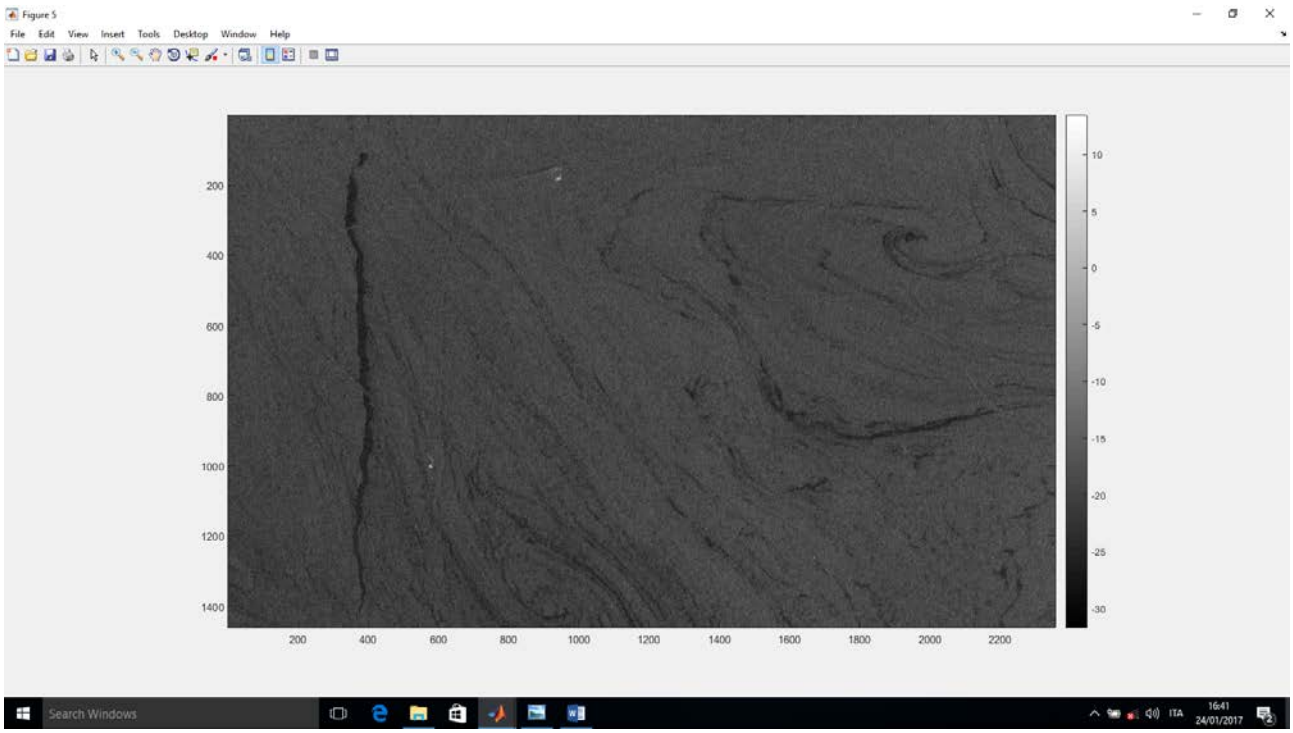
Coordinate del crop della FF

Rect =1.0e+03 *[2.996510000000000   0.886510000000000   2.357980000000000   1.461980000000000]

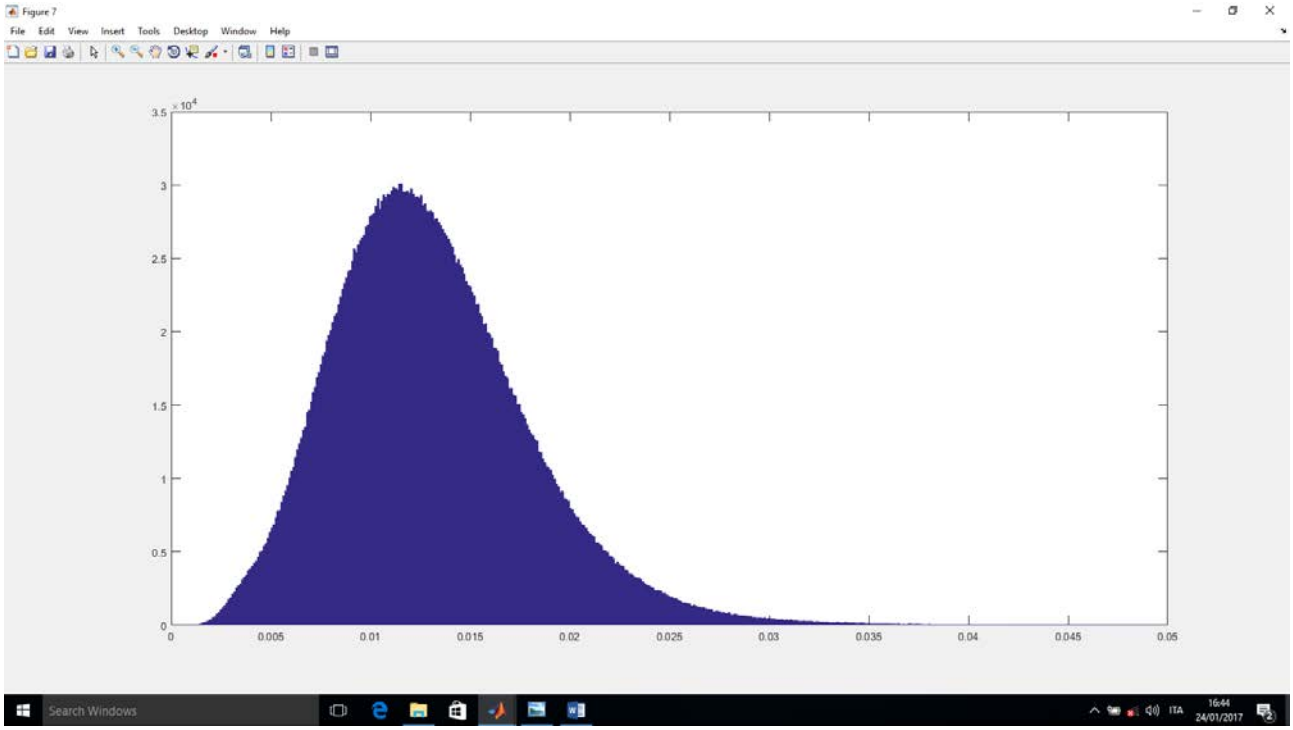
Crop della FF in lineare



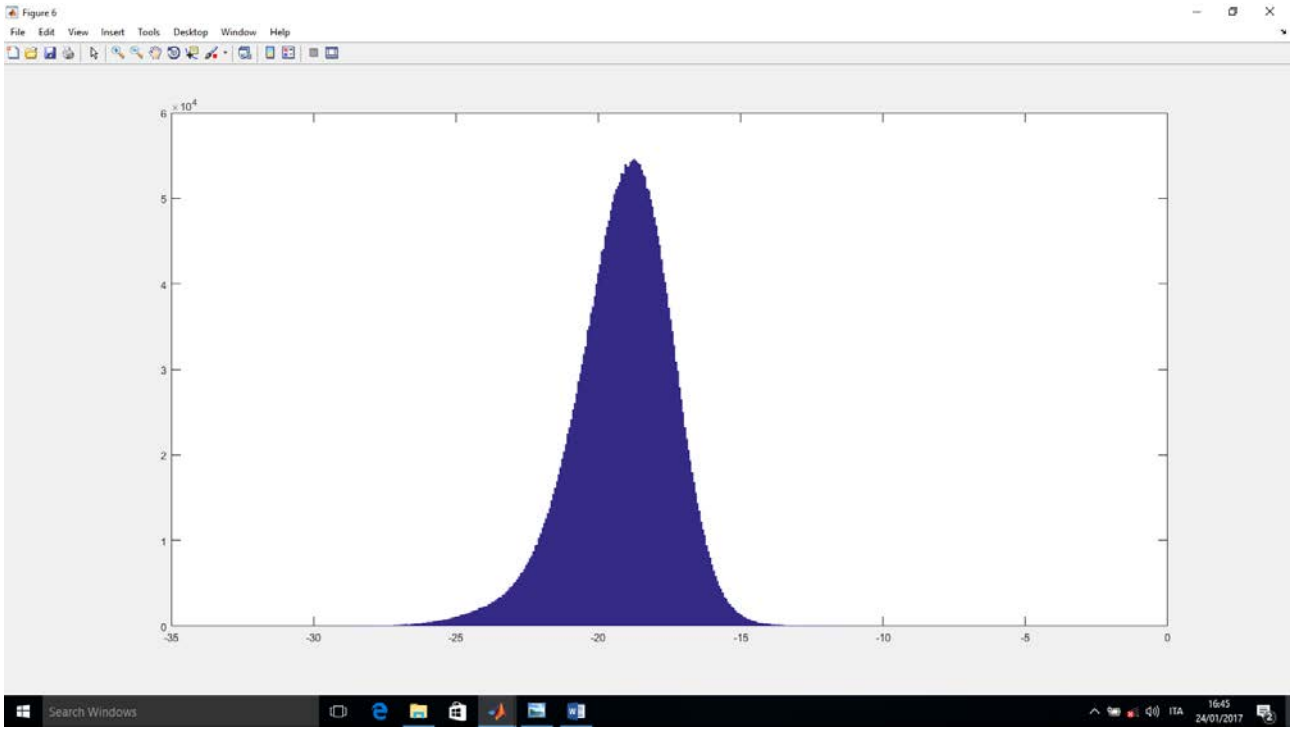
Crop della FF in DB



Istogramma della area di crop sigma0 lineare <0.05 , Nbin=500



Istogramma della area di crop sigma0 DB <0 , Nbin=500



Maschere e sub_crop

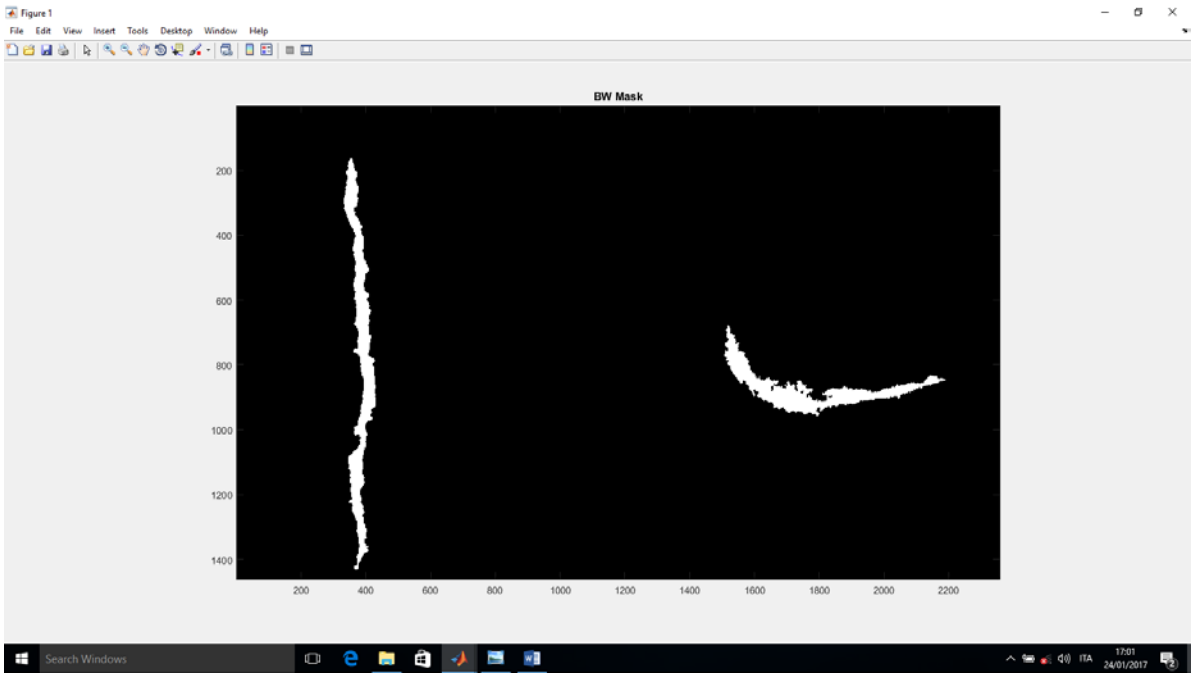
Sub_crop1 Area1 probabile Oil

1.0e+03 *[0.282510000000000   0.159510000000000   0.184980000000000   1.287980000000000]

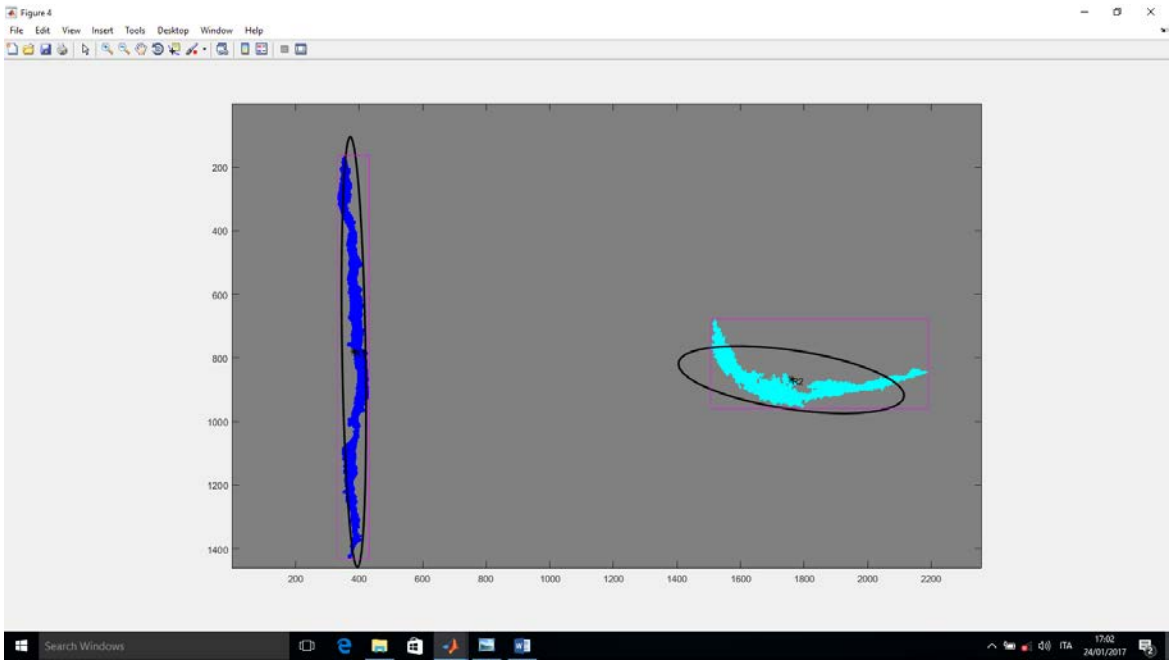
Sub_crop1 Area2 probabile look-alike

1.0e+03 *[1.185510000000000   0.636510000000000   1.153980000000000   0.340980000000000]

Maschera complessiva delle A1 A2



Mappa delle 2 regioni connesse e relativo baricentro Bbox e ellisse minimo



Lista degli spike più evidenti nel crop generale

SpikeCenterList = 1.0e+03 *[

0.579675930200000 0.999716705270131

0.840660709104075 0.905354539480441

0.941961252345276 0.181831165539384

1.676143092474878 1.260116949458680]

Lista delle features da confrontare delle due regioni A1 A2

La prima colonna è solo un indice 1,2 la seconda colonna il valore della feature

perimetri

1.0e+03 *[

0.001000000000000 2.859245000000000

0.002000000000000 2.578327000000000]

aree

1 41718

2 34148

Complessita valutata come P^2/Area

1.0e+02 *[

0.010000000000000 1.959653379842034

0.020000000000000 1.946752406855159]

smooth contrast

1.000000000000000 0.022474378491184

2.000000000000000 0.023957453710013

local contrast Linear m_bkg/m_slick

1.000000000000000 2.036375324233395

2.000000000000000 1.833811180559337

Window Homogeneity s_bkg/m_bkg

1.000000000000000 0.351741077359485

2.000000000000000 0.331725001468036

Slick Homogeneity s_slick/m_slick

1.000000000000000 0.509762216406817

2.000000000000000 0.435041368883819

SlickContrast m_s/m_Win

1.000000000000000 0.568519590350954

2.000000000000000 0.588296044383678

first planar moment [hu moment]

1.0e+02 *[

0.010000000000000 5.131626025060117

0.020000000000000 1.270967952649696]

first planar moment normalized [hu moment normalized]

1.000000000000000 2.757496938617248

2.000000000000000 1.005892409066820

Border Gradient

1.000000000000000 0.002333522501866

2.000000000000000 0.002840806860892

Slick Width

1.000000000000000 33.396839527797667

2.000000000000000 49.979503914704779

GLCM Statistical Texture

contrast	omogeneità	correlation	energy
0.561033123028391	0.843108529092848	0.450042274651951	0.899929538915343
0.341901966386991	0.882531274828679	0.672210055100583	0.940717192557986

Image Statistical Texture

mean	**std**	smoothness	moment3	uniformity	entropy
0.46822	0.78793	0.0000095476	0.000013591	0.51233	1.31728
0.34111	0.82355	0.0000104303	0.000022232	0.68831	0.98022

Curvature si possono anche considerare in valore assoluto

1.000000000000000 -3.013639527132884

2.000000000000000 -27.428660980994316

Min Distance to next bright Spot lo spike si considera vicino alla dark area se la distanza dal suo baricentro dista meno di 70 pixel

1.0e+02 *[

0.0100000 1.6259459

0.0200000 3.1453140]

Number of bright spot Nearby ovviamente non trova nessuno spike vicino

1 0

2 0

Spreading Coefficient

1.000000000000000 99.703187265026770

2.000000000000000 93.769243015455373

Ps per valutare le statistiche radiometriche si considera l'area scura (foreground)

Il corrispondente Bbox e una estensione costruita in questo modo

```
Rect=STATS(p).BoundingBox;
Rect(1)=Rect(1)-10;
Rect(2)=Rect(2)-10;
Rect(3)=Rect(3)+20;
Rect(4)=Rect(4)+20;
```

e rappresenta la scena, il complementare dell'area scura rispetto alla scena definisce l'area di background

per la stima delle texture si considera solo il Bbox

features radiometriche in DB

smooth contrast DB

1.000000000000000 -19.144960543532495
2.000000000000000 -17.292838066994776

local contrast m_bkg-m_slick DB

1.000000000000000 3.339553627955823
2.000000000000000 2.804915022063202

Window Homogeneity s_bkg-m_bkg DB

1.000000000000000 21.286454546751219
2.000000000000000 20.266590788473987

Slick Homogeneity s_slick-m_slick DB

1.000000000000000 25.200033728113880
2.000000000000000 23.532903890881506

SlickContrast m_s-m_Win DB

1.000000000000000 -2.445608898148198
2.000000000000000 -2.354187804133304

Border Gradient DB

1.000000000000000 1.354624214782370
2.000000000000000 1.219801272462088

GLCM Statistical Texture DB

contrast	**omogeneita**	**correlation**	**energy**
2.432610410094637	0.956412065916021	0.447429776953199	0.902834996978136
1.147949190846040	0.970438127510363	0.672546428289436	0.946946079178201

Articoli di riferimento dove le differenti features sono state estratte

1 oil spill detection using sar image (tesi)
2 Oil Spill Detection in Radarsat and Envisat SAR Images
Anne H. S. Solberg, *Member, IEEE*, Camilla Brekke, and Per Ove Husøy
3 AUTOMATIC DETECTION OF OIL SPILLS BY SAR IMAGES - Dark Spot Detection and Feature Extraction

BREKKE Camillla
FFI/RAPPORT-2005/00893

Automatic detection of oil spills from SAR images [Nirchio et al]