Subject: 3D Registration
Posted by Bita on Tue, 09 Oct 2007 15:48:19 GMT
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Hello All !

I am looking for examples of the implementation of 3D registration by Roger Woods.
I would like to implement it with Ratio Image Uniformity (RIU Cost Function) of woods in IDL.

So far I have tried it with other methods but it didn't work out.
Could you please check where the fault lies and eventually suggest a solution?

Thanks
Bita

```
;=======================================================
FUNCTION Cost_Ratio, RefArray, xformArray

nElements = N_ELEMENTS(RefArray)

aRatio1  =  Float(RefArray)   /   Float(xformArray > 0 )
aRatio2  =  Float(xformArray) /  Float(RefArray> 0 )

aRatio1Q  = aRatio1^2
aRatio2Q  = aRatio2^2

nMean1   = MEAN(aRatio1, /Double)
nMean2   = MEAN(aRatio2, /Double)

nMean1Q   =   (nMean1^2)
nMean2Q   =   (nMean2^2)

RIU1       =  Double(Total( aRatio1Q ) - (nElements * nMean1Q) /
nMean1)
RIU2       =  Double(Total( aRatio2Q ) - (nElements * nMean2Q) /
nMean2)

RIU       =  (RIU1 + RIU2 )/ 2

return, RIU

END

;=======================================================
```

```
FUNCTION Cost_Ratio, RefArray, xformArray

nElements = N_ELEMENTS(RefArray)

  aRatio   = Float( (RefArray)  /  Float(xformArray) )
;? aRatio  = Float( (xformArray) / Float(RefArray) )

nMean      = Total(aRatio) / nElements

RIU = DOUBLE(1/nMean) *(SQRT (Total((aRatio - nMean)^2)) /
(nElements-1) )

return, RIU

END

;=======================================================

FUNCTION Cost_Ratio, RefArray, xformArray

nElements = N_ELEMENTS(RefArray)

   aRatio  = Float( (RefArray)  /  Float(xformArray) )
;? aRatio  = Float( (xformArray) / Float(RefArray) )

nMean     = Total(aRatio)/nElements

RIU = DOUBLE(STDDEV(aRatio)/MEAN(aRatio))

return, RIU

END
;=======================================================
```