
Subject: ENVI and complex data

Posted by [William Clodius](#) on Wed, 11 Jun 1997 07:00:00 GMT

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I have ENVI 2.6 running with IDL 4.0 on an SGI IRIS 6.4 system. I have some complex image data produced by FFT's on which I want to perform some processing. While ENVI accepts complex data on input I have the following problems

Spectra appears to display complex numbers as the negative of the real part.

Band Math refuses to accept procedures that require complex data, even though the only available bands are complex dimensioned 128 by 128. For example if I want to display the imaginary component the Band Math Widget displays the message "You have entered an invalid expression. Check for syntax errors or undefined procedures and functions and try again." while the command line displays "% IMAGINARY: Operand must be of complex type: <INT Array(5, 5)>." and does not provide access to the bands. The command line message is particularly confusing as I don't see where it comes up with "Array(5, 5)".

Even with procedures that do not require complex data Band Math appears to give incorrect results, i.e., 1. - Float(B1)/Abs(B1) appears to operate as if abs operated only on the real part of the complex number.

Principle components operates and gives plausible results, but it is not clear whether it uses complex math in the principle components analysis or only uses the real part of the complex numbers.

Does anyone else have experience with complex data and ENVI?

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