Igor
Technical Notes

WaveMetrics Technical Support

#024: Complex Functions

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This Technical Note introduces a group of complex user functions.

Changes since Oct 1990:
Added Igor Pro note.

Accompanying files:

'Complex TEXT' -- text file containing cabs(), csqrt(),cexp(), cln(),csin(), ccos() & cpowi()

Note to Igor Pro Users:

A file containing these functions has been placed in the 'WaveMetrics Procedures' folder. That allows you to have easy access to these routines by simply typing the appropriate '#include' in your procedure window. You can also use the 'Open File' item in the 'File' menu to include them in your experiment. Here is a listing of what routines you get for the file:

#include <Complex Math Functions>
cabs(), csqrt(),cexp(), cln(),csin(), ccos() & cpowi()

Igor 1.2 provides only the most basic complex functions. However, it is a simple matter to write user functions to provide almost any desired capability. In most cases all one has to do is look up the definition of the desired function in a reference

such as Abramowitz and Stegun and then type the function into Igor's procedure window. To save the user some work, the accompanying file 'Complex TEXT' contains the following functions:

cabs(z): Absolute value of complex number z
csqrt(z): Complex square root of complex number z
cexp(z): Complex exp of complex number z
cln(z): Complex ln of complex number z
csin(z): Complex sin of complex number z
ccos(z): Complex cos of complex number z
cpowi(z, n) Complex power z^n where z is complex and n is an integer

Warning: the supplied functions have been given a reality check but have not been extensively tested.

Further Reference:

- Abramowitz, M., and Stegun, I.A., Handbook of Mathematical Functions, Applied Mathematics Series, vol 55, Washington National Bureau of Standards,1964 (reprinted 1968 by Dover, New York)