Rocky Enterprise Linux 9.2 Manual Pages on command 'catanhl.3'

C:\>man catanhl.3

CATANH(3) Linux Programmer's Manual CATANH(3)

NAME

catanh, catanhf, catanhl - complex arc tangents hyperbolic

SYNOPSIS

#include <complex.h>

double complex catanh(double complex z);

float complex catanhf(float complex z);

long double complex catanhl(long double complex z);

Link with -lm.

DESCRIPTION

These functions calculate the complex arc hyperbolic tangent of z. If

y = catanh(z), then z = ctanh(y). The imaginary part of y is chosen in the inter?

val [-pi/2,pi/2].

One has:

catanh(z) = 0.5 * (clog(1 + z) - clog(1 - z))

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

For an explanation of the terms used in this section, see attributes(7).

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?Interface ? Attribute ? Value ?

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?catanh(), catanhf(), catanhl() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

EXAMPLE

```
/* Link with "-lm" */
#include <complex.h>
#include <stdlib.h>
#include <unistd.h>
#include <stdio.h>
int
main(int argc, char *argv[])
{
    double complex z, c, f;
    if (argc != 3) {
        fprintf(stderr, "Usage: %s <real> <imag>\n", argv[0]);
        exit(EXIT_FAILURE);
    }
    z = atof(argv[1]) + atof(argv[2]) * I;
    c = catanh(z);
    printf("catanh() = %6.3f %6.3f*i\n", creal(c), cimag(c));
    f = 0.5 * (clog(1 + z) - clog(1 - z));
    printf("formula  = %6.3f %6.3f*i\n", creal(f2), cimag(f2));
    exit(EXIT_SUCCESS);
}
```

SEE ALSO

atanh(3), cabs(3), cimag(3), ctanh(3), complex(7)

COLOPHON

This page is part of release 5.05 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at https://www.kernel.org/doc/man-pages/.