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***Rocky Enterprise Linux 9.2 Manual Pages on command 'cargf.3'***

***\$ man cargf.3***

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

NAME

carg, cargf, cargl - calculate the complex argument

SYNOPSIS

```
#include <complex.h>

double carg(double complex z);

float cargf(float complex z);

long double cargl(long double complex z);

Link with -lm.
```

DESCRIPTION

These functions calculate the complex argument (also called phase angle) of z, with a branch cut along the negative real axis.

A complex number can be described by two real coordinates. One may use rectangular coordinates and gets

$$z = x + I * y$$

where  $x = \text{creal}(z)$  and  $y = \text{cimag}(z)$ .

Or one may use polar coordinates and gets

$$z = r * \text{cexp}(I * a)$$

where  $r = \text{cabs}(z)$  is the "radius", the "modulus", the absolute value of z, and  $a = \text{carg}(z)$  is the "phase angle", the argument of z.

One has:

$$\tan(\text{carg}(z)) = \text{cimag}(z) / \text{creal}(z)$$

RETURN VALUE

The return value is in the range of  $[-\pi, \pi]$ .

## VERSIONS

These functions first appeared in glibc in version 2.1.

## ATTRIBUTES

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

??

?Interface            ? Attribute    ? Value    ?

??

?carg(), cargf(), cargl() ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

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

## SEE ALSO

[cabs\(3\)](#), [complex\(7\)](#)

## COLOPHON

This page is part of release 5.10 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/>.

2017-09-15

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