

**NAME**

`cproj`, `cprojf`, `cprojl` - project into Riemann Sphere

**SYNOPSIS**

```
#include <complex.h>
```

```
double complex cproj(double complex z);
```

```
float complex cprojf(float complex z);
```

```
long double complex cprojl(long double complex z);
```

Link with `-lm`.

**DESCRIPTION**

These functions project a point in the plane onto the surface of a Riemann Sphere, the one-point compactification of the complex plane. Each finite point  $z$  projects to  $z$  itself. Every complex infinite value is projected to a single infinite value, namely to positive infinity on the real axis.

**VERSIONS**

These functions first appeared in glibc in version 2.1.

**ATTRIBUTES**

**Multithreading (see `pthread(7)`)**

The `cproj()`, `cprojf()`, and `cprojl()` functions are thread-safe.

**CONFORMING TO**

C99.

**NOTES**

In glibc 2.11 and earlier, the implementation does something different (a *stereographic* projection onto a Riemann Sphere).

**SEE ALSO**

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

**COLOPHON**

This page is part of release 3.74 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 <http://www.kernel.org/doc/man-pages/>.