

1 Introduction

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Titane Inria

TITANE Inria project-team *Inria*

Geometric Modeling of 3D Environments

title



Geometry Kernels

2D and 3D Linear Geometry Kernel



Hervé Brönnimann, Andreas Fabri, Geert-Jan Giezeman, Susan Hert, Michael Hoffmann, Lutz Kettner, Sylvain Pion, and Stefan Schirra

This package contains kernels each containing objects of constant size, such as point, vector, direction, line, ray, segment, circle as well as predicates and constructions for these objects. The kernels mainly differ in the way they handle robustness issues.

[User Manual](#)

[Reference Manual](#)

dD Geometry Kernel



Michael Seel

The dD Kernel contains objects of constant size, such as point, vector, direction, line, ray, segment, circle in d dimensional Euclidean space, as well as predicates and constructions for these objects.

[User Manual](#)

[Reference Manual](#)

2D Circular Geometry Kernel



Pedro Machado Manhães de Castro, Sylvain Pion, and Monique Teillaud

This package is an extension of the linear CGAL kernel. It offers functionalities on circles, circular arcs and line segments in the plane.

[User Manual](#)

[Reference Manual](#)

3D Spherical Geometry Kernel



Pedro Machado Manhães de Castro, Frédéric Cazals, Sébastien Lorient, and Monique Teillaud

This package is an extension of the linear CGAL kernel. It offers functionalities on spheres, circles, circular arcs and line segments, in the 3D space or restricted on a reference sphere.

[User Manual](#)

[Reference Manual](#)

roadmap

- learn how to use CGAL package
- learn how to read structure mesh
- learn how to use KINETIC package to fill the structure mesh