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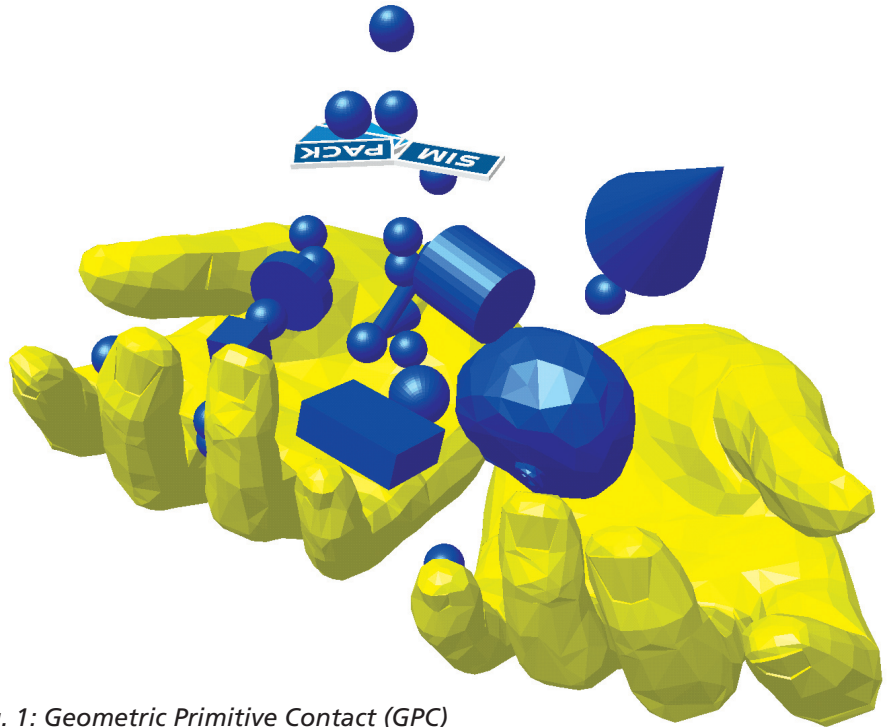


Fig. 1: Geometric Primitive Contact (GPC)

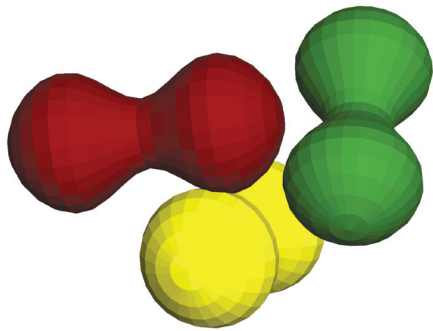


Fig. 2: Polygonal Contact Method (PCM)

New Contact Methods in SIMPACK

SIMPACK 8901 includes the addition of two new contact methods. These are the Geometric Primitive Contact (GPC) and Polygonal Contact Models (PCM).

This new feature will be licensed with the current SIMPACK contact module.

POLYGONAL CONTACT MODEL (PCM)

GEOMETRIC PRIMITIVE CONTACT (GPC)

PCM has been available for several years but up to now only as a user routine, see SIMPACK News "Polygonal Contact Model", Gerhard Hippmann, August 2003 issue.

The GPC method is primarily based upon simple primitives. The analytical descriptions of the contact geometry enables extremely fast calculation times and is therefore suitable for models with numerous contact bodies and also for some real-time applications. The GPC also supports contact with general meshed surfaces using algorithms similar to the PCM method which is described below.

PCM enables an efficient, accurate and robust method for simulating contact between general complicated primitives. The contact forces are based upon the elastic foundation model, aerial damping and regularised coulomb friction. The licensing of the elements is also included within the current contact module.

Supported Geometries:

- Cuboid
- Cylinder
- Sphere
- Cone
- General Meshed Surfaces (Obj)

USAGE

These new features have vastly extended the already wide range of contact functionality within SIMPACK. Several commercial projects with the GPC method are already in progress.

A user only needs to define one force element for all possible contact interactions. Contact primitives are selected within the force element by simply double-clicking on the 3D graphical representation. The force law considers stiffness, damping and coulomb friction.

We hope these elements also increase the level of fun with SIMPACK and we look forward to seeing many new and diverse user applications.

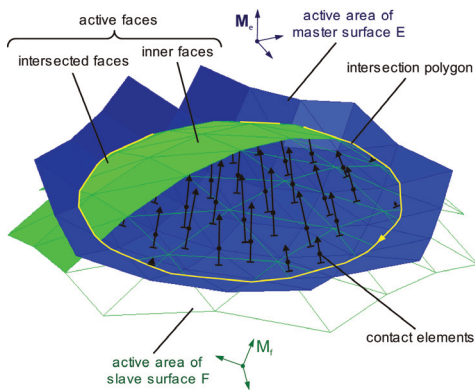


Fig. 3: Components intersection (PCM)