The slide features a decorative layout with blue lines and corner markers. A vertical line on the left and a horizontal line at the top intersect at the top-left corner, with a small blue circle at the intersection. Another horizontal line is positioned below the top one. A vertical line on the right and a horizontal line at the bottom intersect at the bottom-right corner, also with a small blue circle at the intersection. The main title is centered between the top and bottom horizontal lines.

# FLUKA with Geant4 Geometry

Beginners FLUKA Course

# FLUKA with Geant4 Geometry

FLUGG is an extension of FLUKA that allows to

- Define the geometry, material assignments, magnetic field in the Geant4 format
- *navigate* in the geometry calling the Geant4 geometry classes
- FLUGG is available as a tar file from the FLUKA web page
- Presently updated to Geant4 version 9

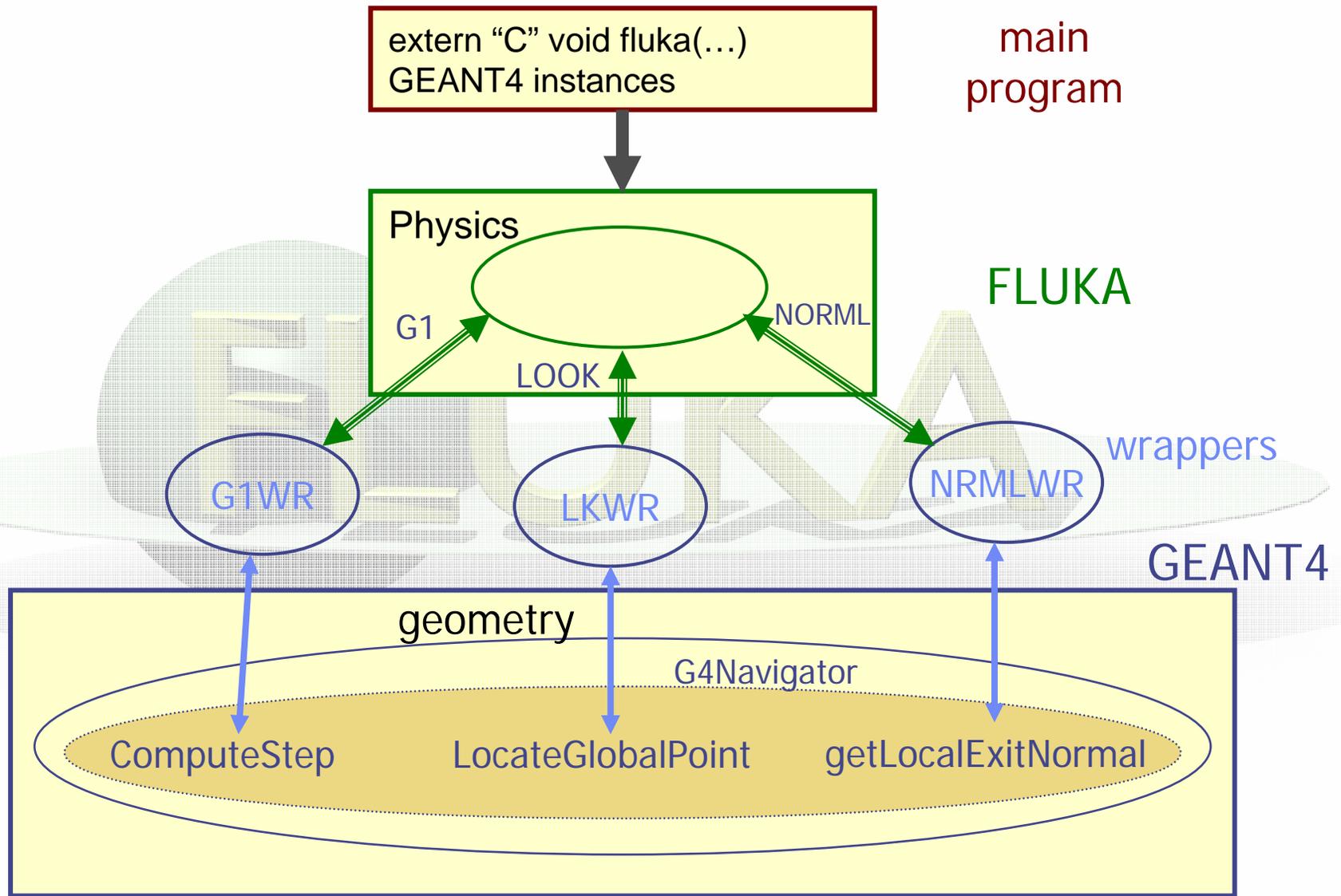
## WARNING:

- No geometry FLUKA debugger (not possible)

## IMPORTANT NOTE:

- Only the *navigation* is performed by G4, the tracking (multiple scattering, approach to boundaries etc) is performed by FLUKA

# General Structure of FLUGG [1/2]



# General structure of FLUGG [2/2]

- The **Installation** procedure prepares **Libraries** with the G4 geometry classes and the FLUGG “wrappers”
- The **User** prepares the **Detector Construction** and a **C++ main** from template
- The application is built from **Flugg + FLUKA** library
- The **C++ main** calls **Geometry** initialization and **FLUKA “real” main**
- The **FLUKA “real” main** reads datacards and performs a “standard” run:
  - Calls to **Geometry** routines are **redirected** through **FLUGG** wrappers to G4 geometry methods
  - **Output** of results is the **standard FLUKA**

# What is needed

FLUKA distribution	<a href="http://www.fluka.org">http://www.fluka.org</a>
FLUGG tar file	<a href="http://www.fluka.org">http://www.fluka.org</a> → tools → flugg
CLHEP libraries	<a href="http://proj-clhep.web.cern.ch/proj-clhep/">http://proj-clhep.web.cern.ch/proj-clhep/</a>
GEANT4 distribution	<a href="http://cern.ch/geant4/">http://cern.ch/geant4/</a>

## WARNING:

- The CLHEP version must be compatible with the G4 version in FLUGG. → if 64 bit machine, use 32-bit compiles CLHEP
- Be careful to compiler "consistency" among libraries.

## How to install:

- Step by step instruction can be found in the FLUGG web page, and in the FLUGG talk of Houston-2005 FLUKA course [available on the FLUKA course website]