Mercredi 16 octobre

IMFT
INSTITUT DE MECANIQUE
DES FLUIDES DE TOULOUSE

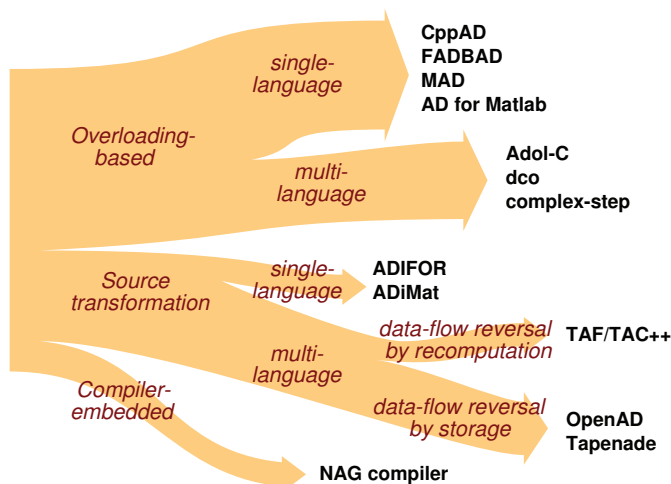**RTRA 3C2T Events Automatic Differentiation**

Training : 8 h 30 - 12 h 30
Practise of AD with Tapenade.

Teacher : L. Hascoet

This training will start with a presentation focused on the AD tool Tapenade, followed by a hand-on session on a medium-size toy CFD code (TinyFlow). Our goal is that each participant finally obtains validated tangent derivatives and adjoint derivatives of TinyFlow. If time permits, we may continue on the same code, with the goal of refining AD to improve efficiency of the differentiated TinyFlow.

The participants must have already installed on their own laptop a Fortran compiler, and a C compiler compatible with it (suggested gnu or intel...). Participants should also have installed Java jdk 1.8, and the Tapenade tool itself. Please do it several days before the training day.
The free «academic» or «evaluation» licenses can be found at :
https://www-sop.inria.fr/tropics/tapenade/downloading.html

single-language
CppAD
FADBAD
MAD
AD for Matlab

Overloading-based

multi-language
Adol-C
dco
complex-step

Source transformation

single-language
ADIFOR
ADiMat

multi-language

data-flow reversal by recomputation
TAF/TAC++

Compiler-embedded

data-flow reversal by storage
OpenAD
Tapenade

NAG compiler

Une taxonomie des outils de DA

The training is free of charge, but the participants must be registered because of the limited number of places and the need to get local wifi account.

For registration please send an email before October 1st to Christophe.Airiau@imft.fr