New general feature for v6p2  links from New version features

v6p2 General
Module Streamline for characteristics (in library Bief)

This module is used for computing trajectories, for advection with the method of characteristics, and for Thompson boundary conditions.

1.Rather heavy modifications have been done so that the result given in parallel and the result given by any number of processors is the same WITH ALL DIGITS. The main idea is that the starting element when computing a trajectory is the same in all cases. In previous versions the starting element could be different, depending on the sub-domain, and this triggered a different use of tolerances (accuracy for belonging to a triangle for example) and different truncation errors. This is true only for the characteristics, the rest of the program, especially iterative solvers for linear systems, will have different truncation errors due e.g. to the computation of dot products, which are still not done in the same order.

2.Quasi-bubble and quadratic functions are fully treated as such (in previous versions the result of advection for quasi-bubble values was obtained by a simple interpolation of linear values). This gives a better quality of a number of test cases of Telemac-2D (bridge piers for example).

 Array KNOGL in parallel

This array in the bief_mesh structure gives the local number of a point known in the original mesh (the contrary of KNOLG). It will be modified in the future because its size is that of the original mesh, which can now be 10000 times larger than locally. This array is replaced from version 6.2 on by a function GLOBAL_TO_LOCAL_POINT(IPOIN,MESH), which returns the local number of point IPOIN in the original mesh. This function is expensive as it implies a loop on all local points, it will be optimised in future versions.