What has been changed

This version of Mcluster has been thought to work with MOCCA code. For this reason, some output functions and GPU and SSE/BSE version has been deleted in the make file. Moreover, the number of objects for each popuatin as defined as $n = n_{singles} + n_{binaries}$, so that $n_{star} = n_{singles} + 2 \cdot n_{binaries}$. Finally, for the same reason, the optimal sampling IMF (Kroupa et al. (2011)) has been deleted; the tidal field is due to a point-mass galaxy, with orbital period of $220\,km/s$.

Structure of main.c In the case of binaries and eigenevolution, the total mass of the system will change. This was, in the original version, applied after scaling the system, influencing the velocity scaling. In order to avoid such error, the main order for generating initial conditions has been changed in the following:

1 generating mass according to the input IMF (for all the populations);

2 generating positions and velocities according to the input profile (for all the populations);

3 generating binaries properties, but not decoupeling (for all the populations);

4 solving Jeans equation (only for multiple stellar populations);

5 scaling the system to N-Body units;

6 decomposing binaries (for all the populations);

7 saving outputs;

Star_array will be constructed as: Nbinaries_1_pop, Nsingle_1_pop, Nbinaries_2_pop, Nsingle_2_pop, ...

Constants The solar radius in km value, the parsec in km value and the gravitational constant has been modified to correct values.

Input variables The input values for variables has been modified (see Readme.pdf document for better explanation).

What is new In this version of Mcluster it has been added:

- Multiple stellar population;
- Energy calculation supposing spherical symmetry;
- Possibility to apply semi-major axis uniform distribution in log(a) for low mass stars and Sana et al., (2012); Oh, S., Kroupa, P., & Pflamm-Altenburg, J. (2015) period distribution for high mass stars;
- new eigenevolution and feeding algorithm - Kroupa (2013)

Bugs In the case of presence of binaries, the maximum mass allowed for single is egual to msort value. This will lead to a wrong single IMF distribution (in particular for small binary fraction).