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 $220 \, km/s$.

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).

Structure of main.c The main structure of Mcluster has been changed as:

1 Generation of stellar masses for all the populations;

2 Generation of positions and velocities for all populations;

3 Solve the Jeans equations in case of multiple stellar populations;

4 Scaling the system;

5 Generating binaries properties;

6 Output

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

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).