



Computer modeling of motion of globular clusters in gravitational field

By Guskov A.S. S.F.U. Physics and Astronomy

Research adviser: Korchagin V.I.

Target list:

- Choose technology for modeling.
- Choose technique.
- Determine all conditions
- Calculate

Chosen
technology
and methods
for computer
modelling

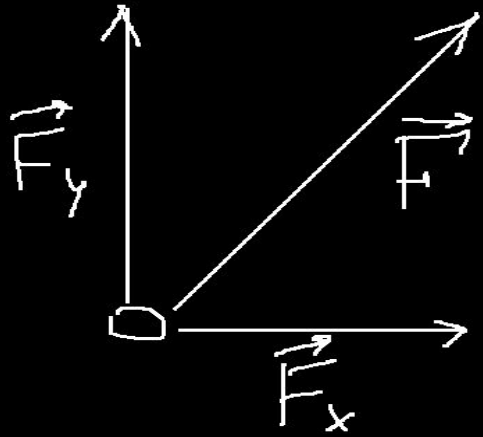
- C++
- Qt
- Forces modeling by Taylor Series





GLOBULAR CLUSTER

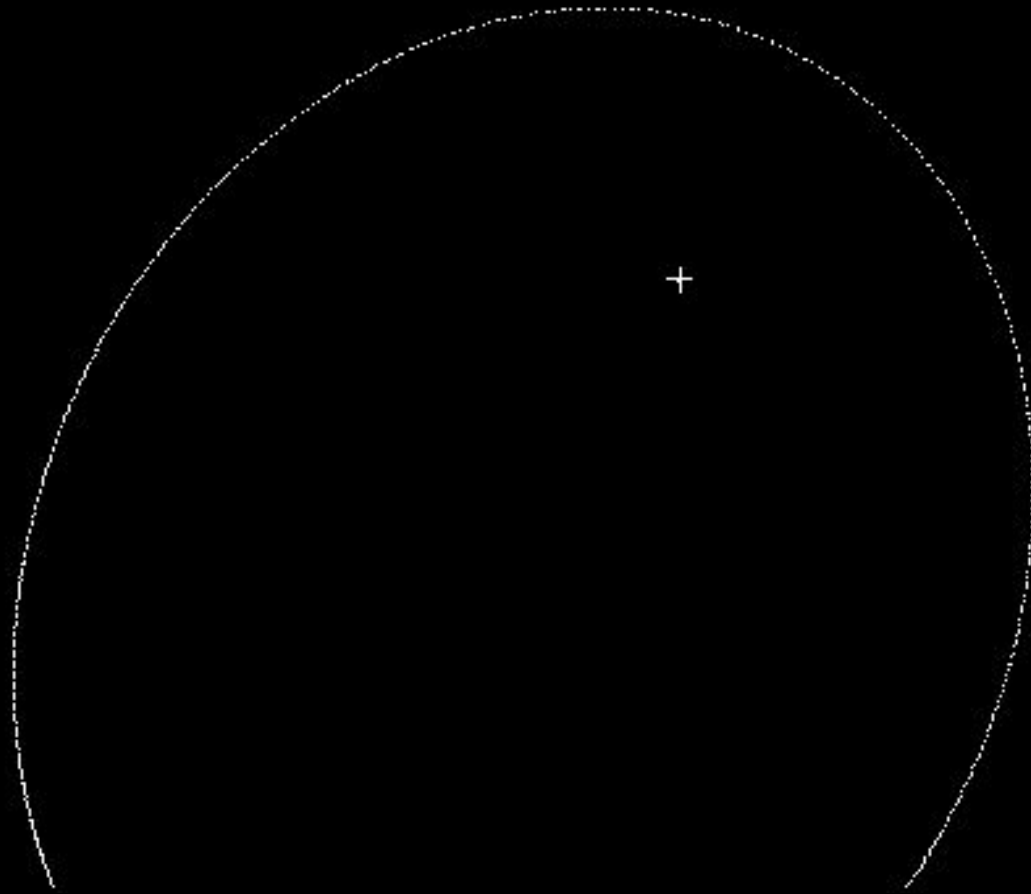
Forces calculating



$$\vec{F} = F_x \vec{i}_x + F_y \vec{i}_y + F_z \vec{i}_z$$

$$f(x) = f(a) + f'(a)(x-a) + \frac{f''(a)}{2!}(x-a)^2$$

Result for one body





Additional
conditions

- Dark Halo
- Galaxy core
- Galaxy disk
- Gas component

= GRAVITATIONAL FIELD



CONCLUSIONS

- Program successful counted the mass center orbit and shows it moving by using the Taylor Series to calculate projections of gravitation force.
- C++ and Qt its a realy cross-platform tools and good approach to solve this task