Computer modeling of motion of globular clusters in gravitational field

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

Target list:

- Choose technology for modeling.

- Choose technique.

- Determine all conditions

- Calculate

Chosen technology and methods for computer modelling

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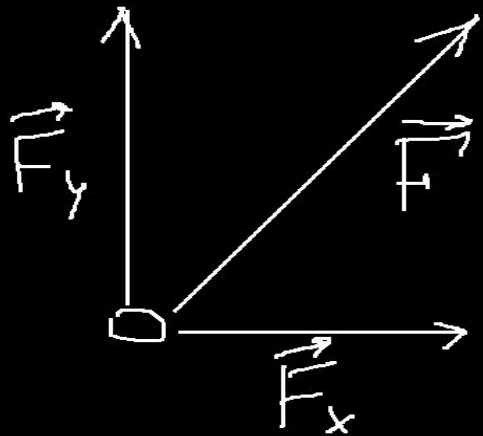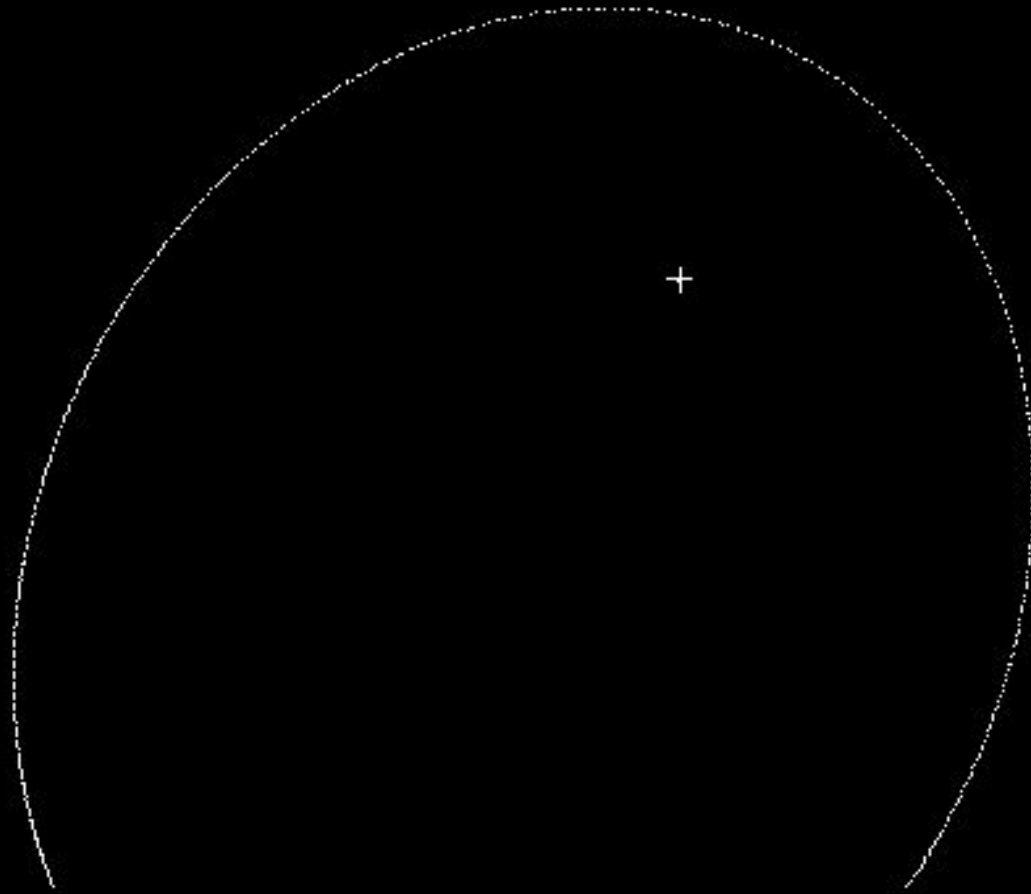- Forces modeling by Taylor Series

GLOBULAR CLUSTER

Forces calculating

$$\vec{F} = \vec{F_x}\vec{\imath_x} + \vec{F_y}\vec{\imath_y} + \vec{F_z}\vec{\imath_z}$$

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

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