

Lingkungan antariksa, orbit satelit dan gangguannya

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20437033&lokasi=lokal>

Abstrak

Satellites which orbit under influence of gravity can be expressed as a set of orbital elements which can be regarded as time - dependent fixed entities. In general, two-body approach is enough, but in reality there are some gradual shifts which can't be ignored. There are some disturbance which occur in satellites which orbiting the earth so the performances of these satellites are not as good as expected. The main cause of this perturbation are the existence of third body, imperfection of earth's symmetry, atmospheric drag, and solar radiation pressure. The effect of perturbation to the satellite orbit can be categorized according to the periodicity of this perturbation. Secular variation shows variations which change the orbit linearly in time, so in the long run it can affect the orbit of this satellite. The most dominant cause of secular variation is the asphericity of the earth. Short term variation is a periodic variation which occur in the orbit in which the time scale is shorter than the orbital period. Long term variation is a periodic variation which occur in the orbit in which the time scale is longer than the orbital period. Atmospheric drag depends linearly on the atmospheric density and High Earth Orbit Satellites are more influenced by solar radiation pressure.