

ZORAN KNEŽEVIĆ, Research interests

- studies of statistical properties of the numbered minor planets sample and of the selection effects involved in asteroid discoveries;
- determination of orientations of asteroid rotation axes by means of the amplitude-magnitude method;
- collisional evolution of the asteroid belt and physical properties of asteroid families;
- computation of asteroid orbits;
- development of analytical perturbation theories and of purely numerical methods for computation of asteroid mean and proper orbital elements;
- classification of asteroids into families;
- analysis of the effects of mean motion and secular resonances;
- chaotic dynamics and application of the theory of Nekhoroshev to the real systems;
- developments of the methods to use the chaotic diffusion for the estimate of the ages of asteroid families;
- theory of motion of a low lunar polar orbiter and development of optimum strategies for orbit maintenance (study conducted for the European Space Agency);
- search for the asteroid close encounters and determination of their masses;
- development of the new methods and algorithms for identification and orbit determination of moving objects to be used in the next generation all-sky observational surveys;
- methods to estimate risk of asteroid collisions with the Earth.