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Title: *"A new list of Near Earth Asteroids with detected Yarkovsky effect"*

Abstract. When an asteroid orbit is affected by non-gravitation perturbations, non-gravitational forces need to be taken into account since they are as important as collisions and gravitational perturbations for the overall understanding of the asteroid orbital evolution.

The Yarkovsky effect is a non-gravitational phenomenon related to the anisotropic thermal emission of solar system objects. This perturbation can be modeled knowing the physical properties of asteroids, and its consequences on the motions can be measured from accurate astrometry.

The knowledge of the physical properties of asteroids is usually not sufficient to produce the thermophysical models needed for the computation of the Yarkovsky acceleration. Nevertheless, it can often be measured as a semimajor axis drift if the astrometric dataset contains extremely accurate observations (e.g. radar data), or if the observations span a sufficiently long time interval.

Farnocchia et al. 2013 list 21 NEAs with a measurable semimajor-axis drift. Since 2013, the number of asteroids for which it is possible to detect the Yarkovsky effect has grown. This is due to the increased quality and time span of the observations, and to new radar measurements that have since become available. We analyze about 400 objects chosen by a suitable criteria involving the semi-major axisaccuracy, among which we are able to detect the Yarkovsky effect for about 50 NEAs, employing a high precision dynamical model, including the Newtonian attraction of 16 massive asteroids and the planetary relativistic terms, and a suitable astrometric data treatment. We present a list of objects with a significant detection of Yarkovksy effect and a value compatible with the Yarkovsky mechanism. Moreover, we perform an in depth investigation about 10 cases with a dubious detected Yarkovsky effect.

The computed non-gravitational perturbations have been added to the web portal of the ESA SSA-NEO Coordination Centre, highlighting the fact that the orbit has been computed taking the Yarkovsky effect into account. The inclusion of non-gravitational perturbations can also affect the results of the impact monitoring, as in the case of (410777) 2009 FD, (29075) 1950 DA, (99942) Apophis and (101555) Bennu.

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