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A New Model of the Near-Earth-Object Population

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Abstract

We construct a new near-Earth-object (NEO) model which describes the debiased orbit and absolute-magnitude distributions of these objects. The model is developed using the same basic approach as the so-called Bottke model [1]. We anticipate that the new model, planned to be finished by mid-2013, will be a substantial improvement over the decade-old Bottke model, because we use more realistic NEO source regions, more accurate orbital integrations, improved estimations of the observational bias, and about 40 times more known NEOs to calibrate the model.

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References

[1] Bottke, W. F., Morbidelli, A., Jedicke, R., Petit, J. M., Levison, H. F., Michel, P., and Metcalfe, T. S.: Debiased Orbital and Absolute Magnitude Distribution of the Near-Earth Objects, Icarus, Vol. 156, pp. 399–433, 2002.