



## **Prospects for the future investigations of Mercury by the BepiColombo Laser Altimeter (BELA)**

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The flight model of the BepiColombo Laser Altimeter (BELA) has recently been delivered for integration on the Mercury Planetary Orbiter (MPO). We performed numerical simulations of the instrument performance expected in flight based on the measured BELA flight model (FM) parameters. In particular, we study measurement performance of topography, slopes, albedo, and roughness. Further, we analyzed the orbit evolution of the MPO based on most recent Mercury gravity data from MESSENGER. This allows us to estimate local and global topographic coverage, as well as the potential for estimates of the tidal Love number  $h_2$ . Also possible implications of BELA science data on Mercury's interior structure, especially on the core radius and the mantle rheology, will be assessed. BELA is built by the Institute of Physics of the University of Bern and the DLR Institute of Planetary Research in cooperation with the Instituto de Astrofísica de Andalucía of the Consejo Superior de Investigaciones Científicas (CSIC) and the Max-Planck-Institute for Solar System Research (MPS).