

# Properties of Resonant Trans-Neptunian Objects Based on Herschel Space Observatory Data

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The goal of our work is to characterise the physical characteristics of resonant, detached and scattered disk objects in the trans-Neptunian region, observed in the framework of the "TNOs are Cool!" Herschel Open Time Key Program. Based on thermal emission measurements with the Herschel/PACS and Spitzer/MIPS instruments we were able to determine size, albedo, and surface thermal properties for 59 objects using radiometric modelling techniques. 22 out of these objects have never been published before. For another 34, previously published objects, we have re-run the thermal model, and for 3 of these objects, we have made the photometry again with the latest version of our data reduction pipeline. This is the first analysis in which the physical properties of objects in the outer resonances are determined for a larger sample. In addition to the results for individual objects, we have compared these characteristics with the bulk properties of other populations of the trans-Neptunian region. The newly analysed objects show e.g. a large variety of beaming factors, indicating diverse surfaces, and in general they follow the albedo-colour clustering identified earlier for Kuiper belt objects and Centaurs, further strengthening the evidence for a compositional discontinuity in the young solar system.