Thermophysical Modelling of Centaurs & TNOs

T.G. Müller[1], E. Lellouch[2], S. Fornasier[2]

[1] *Max-Planck-Institut für extraterrestrische Physik, Garching, Germany*
E-mail: tmueller@mpe.mpg.de

[2] *LESIA, Observatoire de Paris, Université PSL, CNRS, Univ. Paris Diderot, Meudon Pricipal Cedex, France*

The mid- and far-infrared thermal emission of trans-Neptunian objects (TNO) and Centaurs (including submm/mm for the brightest ones) allowed to determine the sizes and albedos for almost 180 objects, and densities for about 25 multiple systems. The derived very low thermal inertias show evidence for a decrease at large heliocentric distances which indicates porous and low-conductivity surfaces. The submm/mm emissivities were found to be low ($e=0.70\pm0.13$) with possible spectral variations in a few cases. The mean albedos increase from about 5-6% (Centaurs, Scattered-Disk Objects) to 15% for the Detached objects, with distinct cumulative albedo distributions for hot and cold Classicals, and a median albedo of the sample (excluding dwarf planets and the Haumea family) of 0.08. The albedo of Haumea family members is close to 0.5, best explained by the presence of water ice. The existing thermal measurements remain a treasure trove at times where the far-infrared regime is observationally not accessible.