

We study asteroidal breakups, i.e. fragmentations of targets, subsequent gravitational reaccumulation and formation of small asteroid families. We focused on parent bodies with diameters $D_{\text{pb}} = 10$ km. Simulations were performed with a smoothed-particle hydrodynamics (SPH) code combined with an efficient N-body integrator. We assumed various projectile sizes, impact velocities and angles (125 runs in total). Resulting size-frequency distributions are significantly different from results of scaled-down simulations with $D_{\text{pb}} = 100$ km targets (Durda et al. 2007). We thus derive new parametric relations describing fragment distributions, suitable for Monte-Carlo collisional models. We also characterize velocity fields and angular distributions of fragments, which can be used in N-body simulations of asteroid families. Finally, we discuss several uncertainties related to SPH simulations.