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Huge waves of meteorite origin

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Asteroid and meteorite risk is now actively investigated in various aspects. If the meteorite falls in the ocean it can generate huge waves with heights exceeded 10 m. For whole history about 10-20 events related with entry of meteorite in water are known. The last event occurred on February 15, 2013 when the meteorite exploded in sky of Chelyabinsk (Russia) and its big piece entered in the Chebarkul Lake. Very often, huge waves of meteorite origin are computed using the conception of equivalent (parametrical) source, whose parameters are determined through meteorite characteristics. Recently, direct methods based on numerical simulations of the Reynolds-averaged Navier-Stokes equations (RANS) have been applied to study wave processes generated by the entry of meteorite. These approaches and their applications to the historic events are discussed in paper.