Structural bifurcation of debris and grids on surfaces of the Churyumov-Gerasimenko comet and dwarf planet Ceres; Kochemasov G. G.; IGEM of the Russian Academy of Sciences, 35 Staromonetny, 119017 Moscow, kochem.36@mail.ru

"Orbits make structures" – a main point of the wave planetology [1, 2]. In the row from Mercury to Mars tectonic granulations increase from πR/16 to πR/2 inversely proportional to the orbital frequencies. Earth as an etalon with 1/365 d. frequency has granule size πR/4 [1, 2]. Further from Sun in the main asteroid belt granules are πR/1 and larger. ΠR/1 means global tectonic dichotomy – convexo-concave body shape. Larger granules exceed a body size and are "invisible". But two body's main wave frequencies (orbiting and rotation) make possible to calculate two side frequencies and corresponding them structural sizes. Dividing and multiplying lower frequency (orbiting) by higher fr. (rotation) one gets two side frequencies.

Thus, Ceres has two main fr. (1/106440 h. and 1/9.07h.) and two side fr. –1/85212 and 1/965410. To both main parameters correspond tectonic granules too large and too small to be observed (3.3πR and πR/3863). To both side parameters correspond tectonic granules πR/38.8 and πR/440.8 (R=475 km), thus about 38.4 km and 3.4 km. Now both sizes are discerned: larger granules from larger distance as 'blobs" at wave intersections (HST image PIA10235; Dawn's distant image FC21B0032726_smooth_700-237000km.jpg) and small circles in strings and grids covering the whole imaged surface (the northern half of Ceres from the 22000 km).

The Ch-G comet 1/6.6 y. or 1/57552 hours orbital fr. gives 1.65 πR tectonic granule – too large to observe directly. The modulations (rotation fr. 1/12.5 h.) gives two side frequencies: 1/4604 and 1/71940. To them correspond two granule sizes: πR/4604 & πR/719400 (R=~ 2500-2000m) or 1.70-1.36 & 0.011-0.009 m. Rosetta' images reveal penetrating comet's body geometrically regular lattice with spacing about a few meters. Its more accurate dimension can be measured at a block of ~ 5 meters across where stripes width is about 1-2 meters and a granule, consequently, is about 1- 2 meters across. The smaller (finer) modulated centimeter fragment size is presented in numerous "deluvial" covers in local depressions. The coarser meter size spherical (polyhedron) boulders also are ubiquitous in Rosetta' images. It is important that only calculated two fragment sizes prevail amidst derbies released from outcrops appeared as 3D " wafer cakes".

References: [1] Kochemasov G.G. (2007) Calculating size of the Saturn's "Leopard Skin" spots // Lunar and Planetary Science Conference (LPSC) XXXVIII, Lunar and Planetary Inst., Houston, USA, March 2007, Abstract # 1040 (CD-ROM). **[2]** Kochemasov G.G. (2015) A wave modulation nature of the 3D structural lattice of the Churyumov-Gerasimenko comet icy core // 46th LPSC, 2015, Abstract # 1088.