

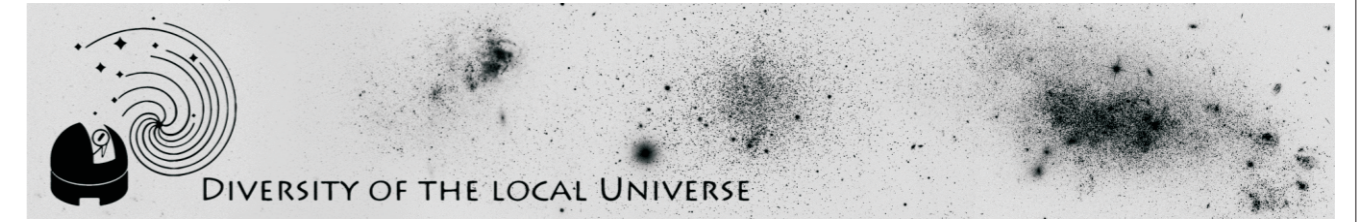
Catalog & Atlas of the LV galaxies



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We present a database of galaxies in the Local Volume (LV) (<https://www.sao.ru/lv/lvgdb/>) having individual distance estimates within 11 Mpc or corrected radial velocities $V_{LG} < 600$ km/s. It collects data on the following galaxy observables: angular diameters, apparent magnitudes in far-UV, B, and Ks bands, H and HI fluxes, morphological types, HI-line widths, radial velocities, and distance estimates. It also contains a consolidated set of optical images of all the galaxies from the SDSS and DSS surveys and H images of galaxies that were observed with the 6-m BTA telescope. The latest version of the Updated Nearby Galaxy Catalog (UNGC) (Karachentsev et al. 2013) contains 869 objects, now in the database there are 1209 objects. We present some main dependencies describing the updated sample LV galaxies: Hubble flow, distribution galaxies according to their distance estimates and on the sky, relation between the absolute magnitude, Holmberg diameter, and rotation velocity et al.

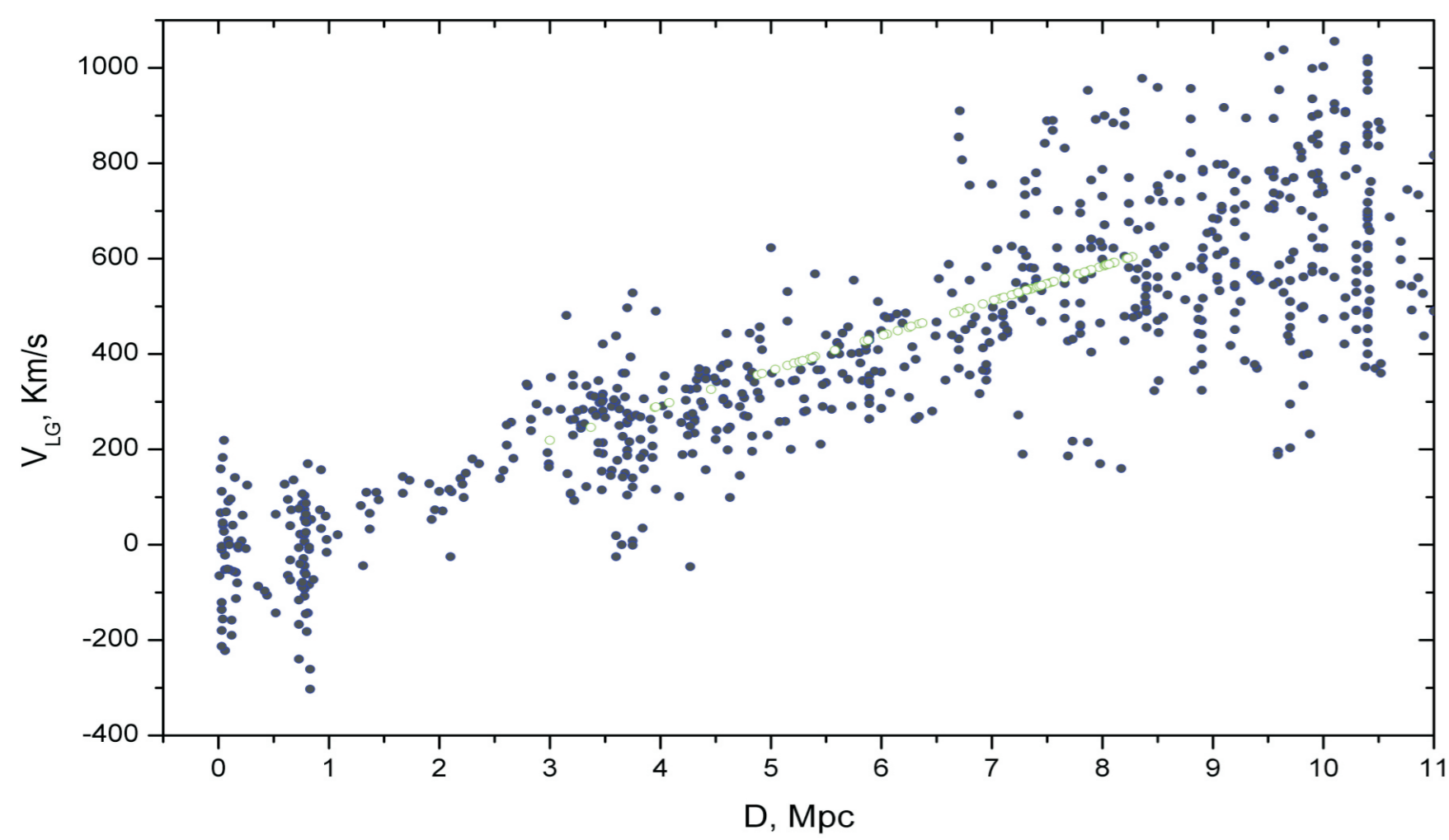


Fig 1. The Hubble flow around the Local Group centroid. Some galaxies in the distance range 3-9 Mpc without individual distance estimates are drawn to trace the slope $H_0 = 73 \text{ km s}^{-1} \text{ Mpc}^{-1}$ (open green circles).

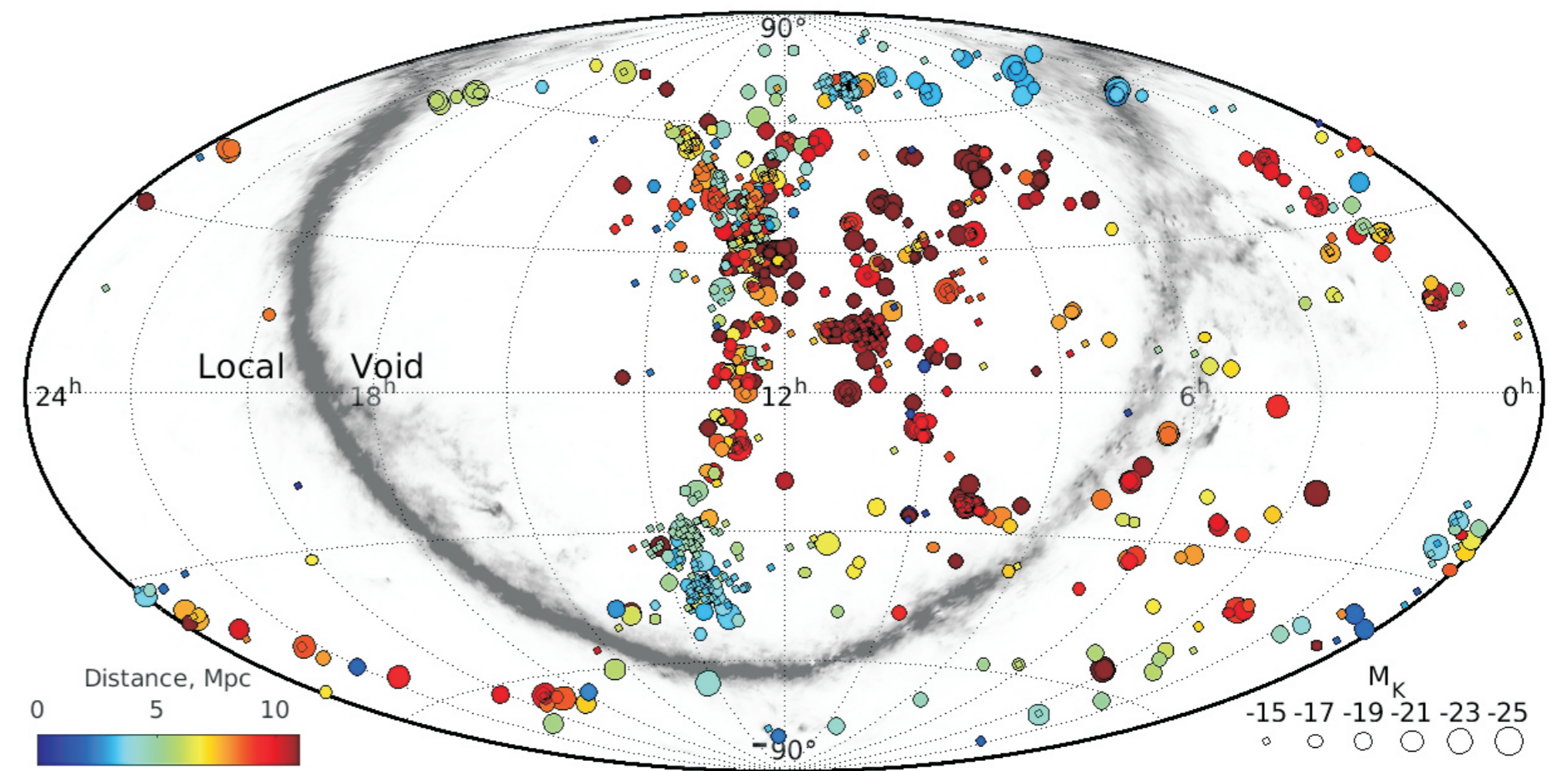


Fig 2. Distribution of nearby galaxies on the sky in equatorial coordinates. The Local Group members are not shown. Galaxy distance and luminosity are indicated by circles of different color and size. The Zone of Avoidance in the MilkyWay is outlined by gray lane.

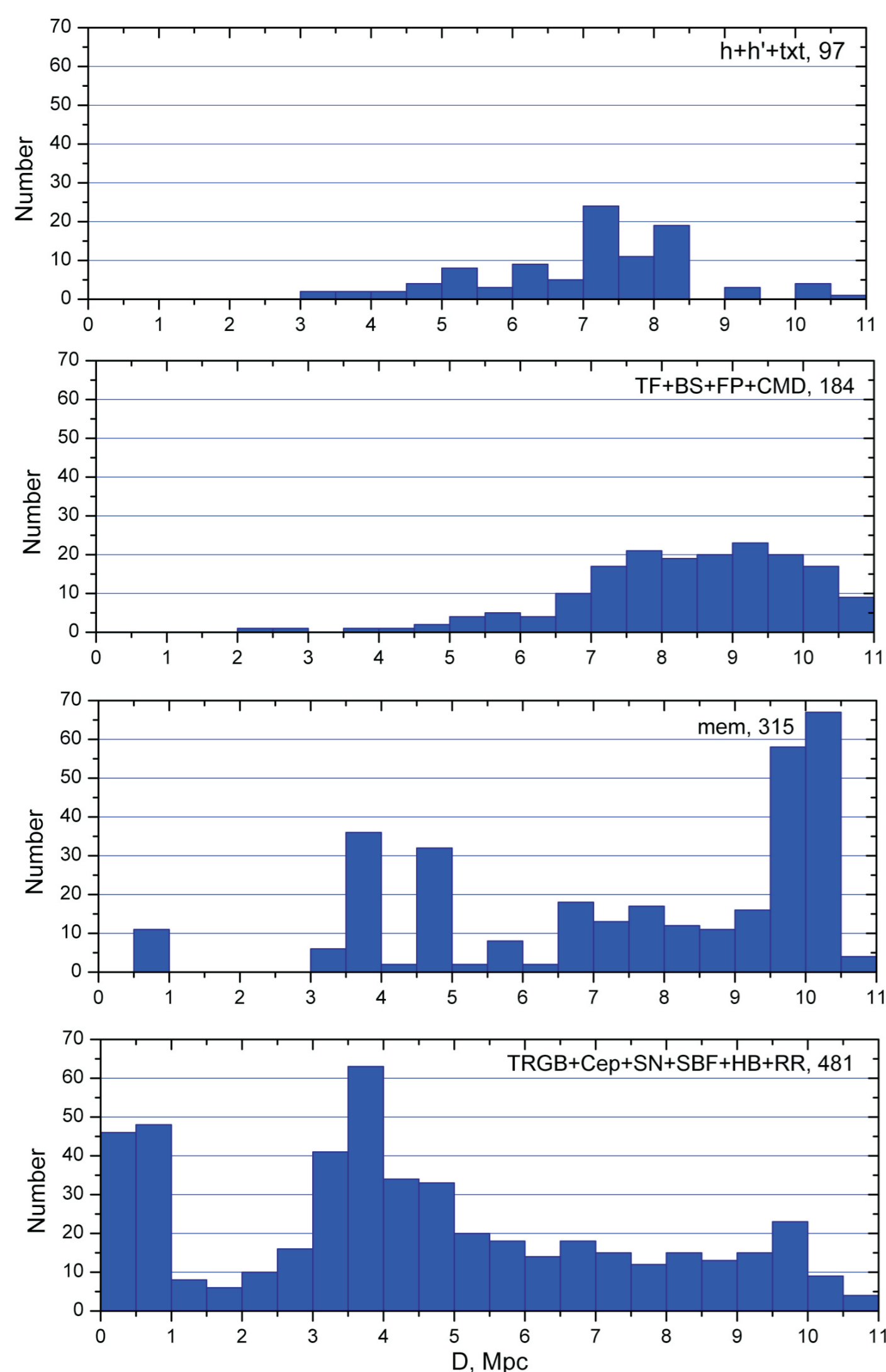


Fig 3. Distribution of 1077 nearby LV galaxies according to their distance estimates derived by different methods. The distance medians on these panels substantially vary for different methods. The smallest median of $D \sim 4$ Mpc falls within the subsample TRGB+Cep+SN+..., where the accuracy of distance measurements is the highest, amounting to 5-10%.

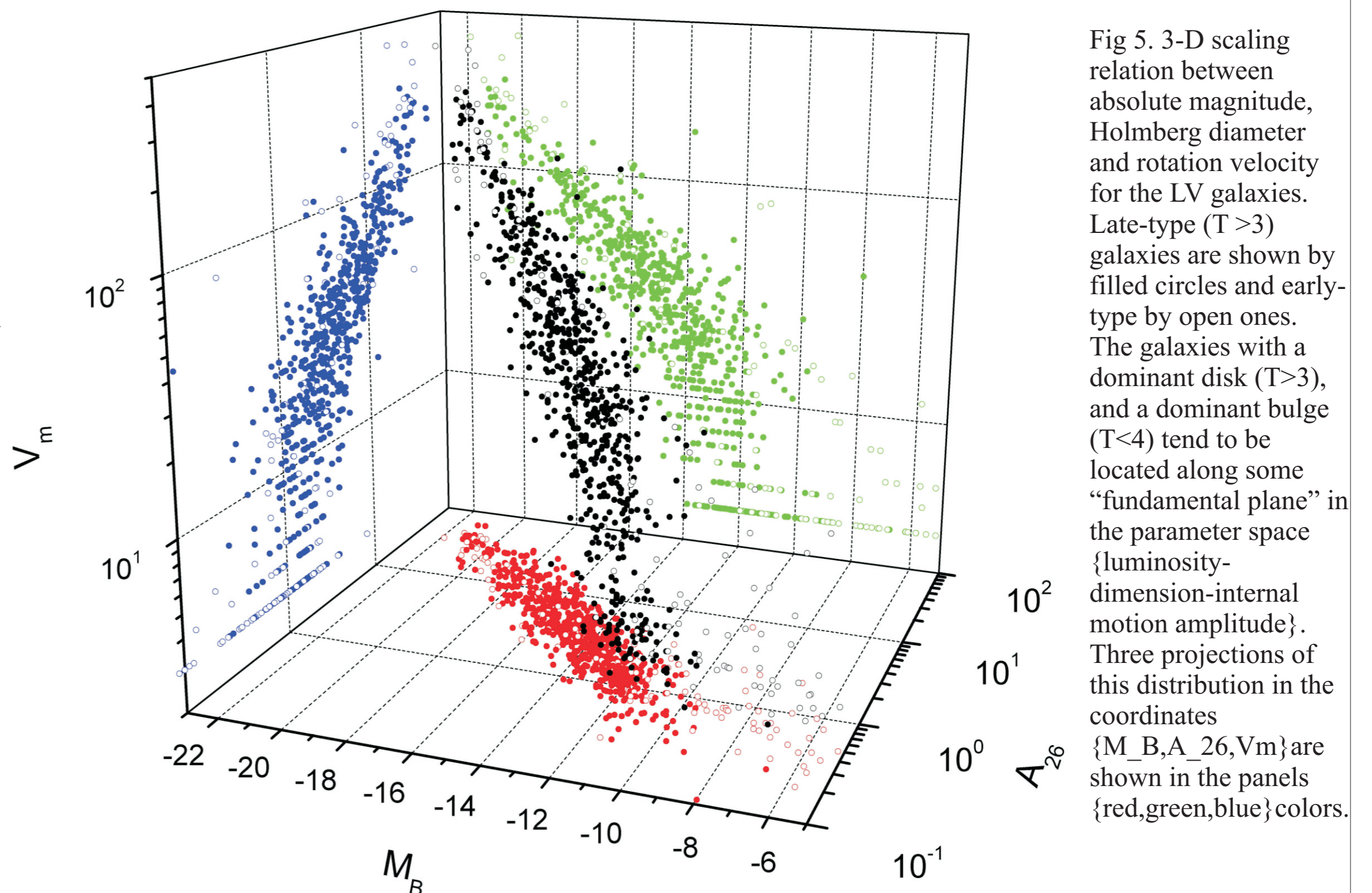


Fig 5. 3-D scaling relation between absolute magnitude, Holmberg diameter and rotation velocity for the LV galaxies. Late-type ($T > 3$) galaxies are shown by filled circles and early-type by open ones. The galaxies with a dominant disk ($T > 3$), and a dominant bulge ($T < 4$) tend to be located along some "fundamental plane" in the parameter space {luminosity-dimension-internal motion amplitude}. Three projections of this distribution in the coordinates $\{M_B, A_{26}, V_m\}$ are shown in the panels {red, green, blue} colors.

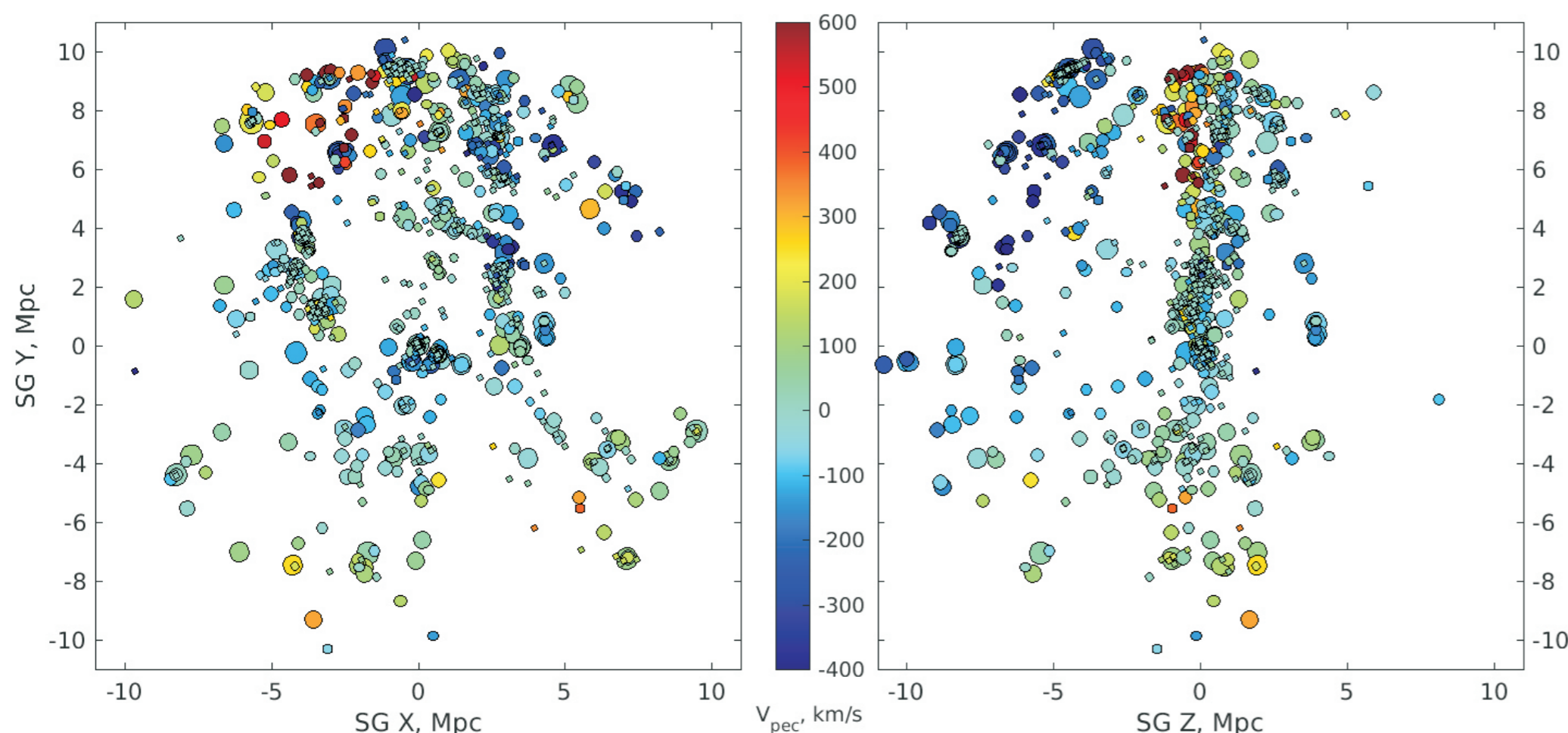


Fig 4. Distribution of the LV galaxies within 11 Mpc in Cartesian Super-galactic coordinates. Luminosity of the galaxies is marked by a size of circles and peculiar velocities are indicated by the color scale.

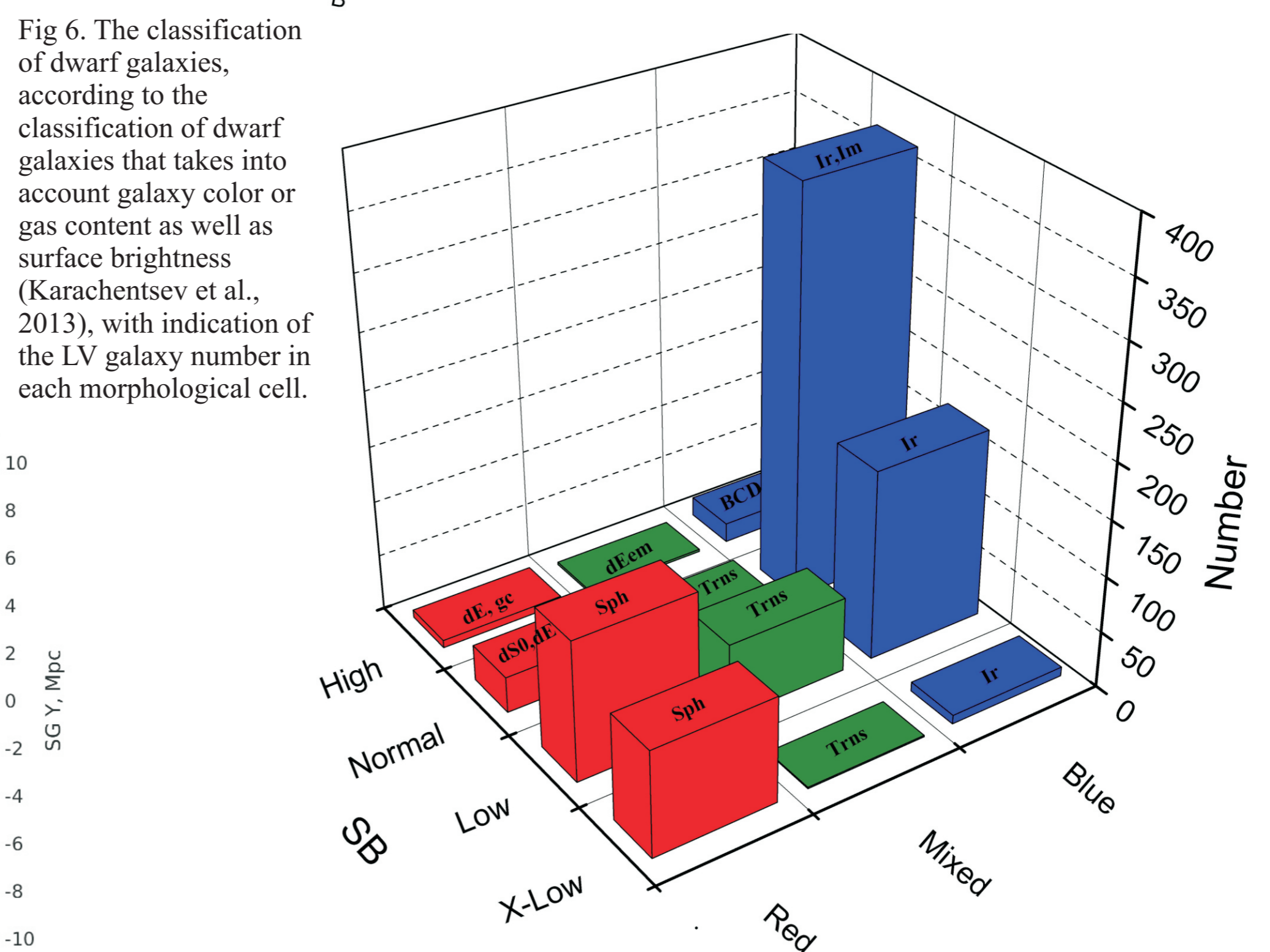


Fig 6. The classification of dwarf galaxies, according to the classification of dwarf galaxies that takes into account galaxy color or gas content as well as surface brightness (Karachentsev et al., 2013), with indication of the LV galaxy number in each morphological cell.