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Based on vector magnetic data from the CHAMP satellite, average daily spherical harmonic models of the main geomagnetic field to n = m = 10 have been constructed for the period from May 2001 to the end of 2009 at an interval of 4 days. The geomagnetic dip poles (the points where magnetic field lines are vertical to a sphere centered in the Earth's center) were modeled on different altitudes starting from the surface and up to 10 Mm for each half year average with Gaussian decomposition degree n from 1 till 10. Final result is that realistic magnetic field lines near those dip poles are sufficiently shifted and different in shape from the lines near the pure geomagnetic dipole that is with n=1 only. This affects the modeling of the magnetosphere formation near its cusp that was considered only with n=1 yet. We found that accounting only a few more (just up to n=2…4 depending on the required accuracy) Gaussian harmonics could improve the active planetary magnetosphere modeling via their grate influence on the polar cusp area. That could be important for the magnetic protection of the planetary atmosphere. So, we estimated possible dip poles and corresponding changes in polar cusp area for the Earth and some other planets.