

My thesis is an attempt to determine cosmological omega factors using the data measured during observations of the supernovae type Ia with cosmological redshift $z \in [0, 1]$. For the determination of omega factors I use the method of fitting measured data in Hubble's diagram. I evaluate the fits by the χ^2 -tests. The values of omega factors, coming out of the analyses as the most probable ones differ from the results which are published in the contemporary scientific literature. The question which I am posing is, if it is correct to reject the cosmological models with a zero value of the cosmological constant. At the first sight statistical results of χ^2 -test, which issue from my thesis, seem to be sufficient enough to reject these models. But the denial of the zero cosmological constant appears as ambivalent by detailed analysis of the occasions and reasons for it. As the basis for my analyses, I use the data collected by a number of scientific teams. I cannot successfully fit most of these data, because the dispersions of their positions in Hubble's diagrams are too large. I can conclude that the observations of the supernovae Ia alone are not satisfactory for a reliable determination of the cosmological omega factors.