Abstract:

Quantitative reconstruction of vegetation from fossil pollen data makes is possible to learn about historical development of the flora of a particular area and, thus, to a certain degree about the climate changes as well. Parameters (the so-called pollen productivities) needed in order to convert the pollen data into the vegetation data can be acquired by calibration from modern samples. The constancy of these parameters in time is assumed on the basis of the principle of uniformitarianism. Due to climatic conditions, however, pollen productivities are not constant in space and must be estimated for each region separately. The pollen and vegetation percentage data can be used to carry out relative pollen productivity estimates (PPE). The relative pollen productivities are related to a reference taxon, which has a value of 1 and vegetation abundance expressed by content units. Relative pollen productivities are estimated by means of the so-called ERV models. Before entering the ERV models, the vegetation data must be weighed by the distance in order to take into account the fact that the more remote plants contribute to the sample with a smaller quantity of pollen than the nearer ones. It is the Prentice-Sugita model of pollen dispersion ant disposition that is currently the most appropriate weighing method as it also takes into consideration various dispersion capacities of pollen grains of different taxons and some climatic parameters. The knowledge of principal tree species of the Czech Republic, which will be the result of following Master thesis, will facilitate the reconstruction of the vegetation development of the landscape in past times.

Keywords: ERV-model (Extended R-value model), Prentice-Sugita model, quantitative reconstruction, pollen analyses