

## Abstract

Locality Mokrsko-west is located inside the Josef mining gallery and belongs to the ore district Psí Hory Mountains, known for its high content of micro-granular gold (~ 100 g/t). It is situated within the apophysis of Sázava tonalite, which is a part of Central Bohemian Plutonic Complex, located southerly from Prague. Besides other structural elements, the whole locality contains the network of sheeted quartz veinlets, which is the aim of this thesis. Data from vectorization and image analysis of the photographic documentation from the gallery and electron microscope has been used. The statistical approach has been used to quantify proportions of mineral phases within the quartz veinlets, their cumulative spacing and fractal distribution. Image analysis confirmed the presence of K-feldspathic metasomatism which affects the plagioclase grains. It forms rims on the edges of the quartz veinlets. The proportional relationship of K-feldspar and quartz within the veinlets wasn't confirmed. It's therefore possible that they were two separate processes of the uncertain time relation. Transfer from the lognormal distribution in histograms of vein spacing in drill-cores to the more normal distribution of the veinlets in the gallery walls was observed. Results from the cumulative spacing analysis confirmed this trend. This implies the relative homogeneity of the system and even spacing of the quartz veinlets. Fractal dimensions calculated from the dataset of 8 000 separate measurements gives the  $D > 0.9$ . This as well corresponds with the even spacing distribution. It is likely that such a distribution of veinlets is not result of simple extensional jointing and hydrothermal fluid infill. Possible explanation could be the channelized fluid flow propagating upwards within the previously altered and therefore weakened rock. The origin of the sheeted vein system spreading all along the Mokrsko-west gallery could belong to the continuous fluid flow during one regional stress regime.