

Abstract

Intrusive rocks provide a unique opportunity to study the mechanisms of spatial movement and crystallization of magma in individual stages of development. Intrusive porphyry rocks support additional information about the evolution and conditions of crystallization taking place in the deep development of the parental magma that is contained in the zoning of the feldspar phenocrysts. The knowledge obtained may provide a key to the interpretation of complex magmatic systems with a significantly more complicated history. This thesis utilizes petrological and mineralogical methods to study three different dyke systems in the western part of the Bohemian Massif. Quantitative textural analysis, X-ray powder diffraction and microanalytical methods are used to study granite, syenite and diorite porphyry and their K-feldspar and plagioclase phenocrysts. Textural records of the porphyry rocks of the three dyke systems and crystallographic-chemical records of their feldspar phenocrysts suggest a mechanical flow accumulation taking place within the dyke at all three locations, but with different characteristics of magma flow rheology. The records also suggest different deep developments and crystallization conditions of the parent magmas of the studied dyke systems.