## CONTENT

Al	BSTRACT	3
F	OREWORD	5
1	INTRODUCTION	7
2	GEOMORPHOLOGY AND GEOLOGY OF THE STUDY AREA	9
	2.1 Geomorphology	9
	2.2 Geology and lithology	10
	2.3 Tectonic network	
3	BEDŘICHOV WATER SUPPLY TUNNEL	
	3.1 Petrography and geochemistry of granites in the Bedřichov tunnel	
	3.2 Tectonic network in neighbourhood of the Bedřichov tunnel	20
4	MAIN RESULTS OF THE STUDY	
	4.1 Structural analysis of granites in the Bedřichov tunnel	24
	4.1.1 Database and statistical processing of structural measurements	25
	4.1.2 Magmatic structures	29
	4.1.3 Photogrammetric analysis of K-feldspar phenocrysts and mafic enclaves orientation	32
	4.1.4 Magmatic microstructures	37
	4.2 Tectonic network in granites of the Bedřichov tunnel	
	4.2.1 Orientation and density of tectonic network	
	4.2.2 Statistical classification of fractures and joints	42
	4.2.3 Dilatation of granite massif in the Bedřichov tunnel	45
	4.2.4 Paleostress analysis of tectonic network	46
	4.2.5 Position of the Bedřichov tunnel in tectonic network models of granite massif	
	4.3 Micro displacements on tectonic fractures in granites of the Bedřichov tunnel	
	4.4 Seismic activity in the environs of the Bedřichov tunnel	
	4.5 Mineralogy	58
	4.5.1 Fracture carbonates in granites of the Bedřichov tunnel	58
	4.5.2 Fluid inclusions and stable isotopes of fracture minerals	
	4.5.3 Recent minerals and the processes of their precipitation on walls of the Bedřichov tun 67	ınel
	4.6 Composition of ground- and mineral waters in the study area	73
5	METHODOLOGY	81
	5.1 Geophysical survey	
	5.2 3-D visualization of the Bedřichov tunnel wall	
	5.2.1 3-D visualization of the tunnel wall shape	
	5.2.2 3-D visualization of the tunnel wall geological scene	88
	5.2.3 Analysis of the tunnel wall geological scene – classification of the intensity of granite	
	alteration	
6	CONCLUSIONS	93
_	DEPENDENCE:	~