This Master thesis focuses on a river network characteristics in the Jizerské hory Mts., northern Bohemia. This part of the Czech Republic represents an area, which was during Tertiary and Pleistocene affected by neotectonic movements. Therefore, 30 longitudinal profiles of selected rivers were constructed to determine areas influenced by tectonics most intensively. These profiles were classified into four categories according to shape of profile curve. Also valley cross sections were made on five selected rivers. Additionally, the Jizera and Jizerka rivers were studied to assess changes of their streams in the period of 19382012.
On the north-western (the Jeřice river catchment) and northern (the Smědá river catchment) slopes of the Jizerské hory Mts., areas most affected by neotectonic movements were detected. Tectonically controlled valley cross sections are distinctive on the Smědá, Jizera and Kwisa rivers. On the Jizerka and Jizera rivers, lateral erosion rate ranges up to 0,5 m/year.