

Abstract

The main aim of this thesis is to provide greater details on the timing of the fluvial river systems formation in the middle and the northern Bohemia. We focused on the Ploučnice River and Vltava River evolution. The river systems are very complex therefore we have used multiple approaches of the research with the disciplines range from geology, sedimentology, geomorphology, geochemistry, over different dating methods such as ^{10}Be and ^{26}Al isochron burial dating, optically stimulated luminescence dating and radiocarbon dating methods. Our results suggests that the terraces are significantly older than previously proposed. The fluvial style of the Ploučnice River system changes from high-energy braided to long-bend meandered river in the upper terrace levels (36 to 29 m above the modern river) and from high- to medium-energy braided river in the middle terrace levels (22-14 m). In the lower terrace levels (13 to 5 m) high-energy braided to long-bend meandered river environments were identified. Terraces were dating at 34 m, 29 m and 14 m above the modern floodplain with cosmogenic radionuclides while the 19 m, 12 m and 6 m above the modern floodplain terraces were dating with OSL. The time span represented by the river terraces remains unclear and varies from Eburonian to Eemian (1.68 to 0.056 Ma). We establish two different model of the Ploučnice River evolution based on influence of tectonic processes and possibility of resedimentation of sampled clasts (Štor et al. in prep.- Appendix 4). During transition from Upper Pleistocene to Holocene we recognized four developmental phases of the river: Upper Pleistocene braided floodplain; Late Glacial/early Holocene anabranching river environment; Middle Holocene abandoned anabranching channels and late Holocene meandering river environment (Štor et al. 2016 - Appendix 3). The Vltava fluvial system in the area of the Vltava- Labe rivers confluence were dated by isochron burial age constraints of four selected fluvial accumulations in range between 1.00 ± 0.21 to 1.99 ± 0.45 Ma (Schaller et al. 2016a,b- Appendix 1,2). Results indicate that the cosmogenic nuclide-based ages are generally older than ages derived from previous work and that the sedimentary environments of the fluvial systems strongly depend on bedrock lithology and landscape surroundings. The data from isochron burial dating of the Vltava River acumulations grow up the question about possibility of varying sedimentary environments from river to alluvial fan environments during the forming of fluvial/alluvial accumulations in the Vltava-Labe rivers confluence.