Abstract

This thesis is summing up the exploration of fusite layers in the middle coal bench of the main coal seam in the Most Basin, studied with support Severočeské doly a. s. in the Bílina opencast mine. These layers are interpreted as a result of wild fires of wetland vegetation and represent charcoal horizons. Several methods have been used for research of these layers. These include four lithological profiles throughout the middle coal bench in different places of Bílina opencast mine, usage of non-core drilling data (speed and force of auger) and comparation of these data with the profiles, and finally, the maceral analysis of the part of the middle bench between two flooding horizons marked by carbonaceous clay partings. Observations indicate that the charcoal layers are hardly recognisable because of their small thickness (few centimetres maximum) and lenticular nature (their lateral continuity usually does not exceed several tens of meters). The coreless drilling according to its sensitivity shows the potential of its usage for identification of fusite layers, although comparison with nearby field section is recommended. Maceral analysis shows that huminite is in favour against liptinite and inertinite. It is clear from the data, that the fusite layers were created as a result of burning vegetation islands in the peat forming swamp, and this was done repeatedly between flooding events. For better understanding the evolution of the middle coal bench, a depositional model explaining the succession of environments and formation of charcoal horizons was suggested.