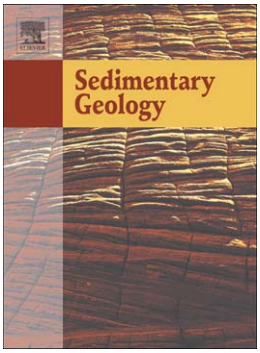

Sedimentary breccia formed atop a Miocene crevasse-splay succession in central Poland

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Sedimentary breccia formed atop a Miocene crevasse-splay succession in central Poland

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ABSTRACT

This paper focuses on the poorly lithified and strongly deformed debris-flow deposits of mid-Miocene age referred to as sedimentary breccia. They are situated between two benches of the first Mid-Polish lignite seam (MPLS-1), which is currently exploited in the Tomisławice opencast (Konin Lignite Mine) in central Poland. The examined breccia consists of fine-grained sandy or silty-sandy blocks with a coaly-silty sand matrix, and ranges from matrix- to clast-supported. The brecciated deposits are chaotic, folded to thrust-faulted with noticeable shear surfaces. These structures, which correspond to plastic and/or brittle deformation, are interpreted to be typical of laminar and low cohesive debris flows. The studied sedimentary breccia developed during initial stages of overbank flooding after the formation of the crevasse splay. In this case, it is possible that gravity-driven mass transport (debris flow) was triggered by saturation of the natural levee deposits with rapidly increasing in-channel water. The first identification of the breccia at the top of the mid-Miocene crevasse-splay body in central Poland can contribute to a further understanding of sedimentary processes that occurred during this breccia deposition and processes associated with present crevasse splay deposition.

Keywords: Sedimentary breccia; Debris flow; Crevasse splay; Miocene; Poland.