Sedimentary structures were examined in thin sections. While in the Bakony exposure clasts of various size and origin were found, the appearance of these minor clasts was subordinate in the Pilis thin sections. No clear graded bedding was found, but clasts were organised in thinner-thicker uneven beds.

In order to understand the 3D position of the bigger blocks, multi-electrode geoelectric sections were recorded in both study areas. The results of these studies show that Upper Triassic has a high, and Jurassic (especially radiolarite and overlying pelagic limestones) a low resistivity. Therefore these lithologies differentiate well on the sections. The records show a good fit with the mapped bigger boulders, which in both cases are detached from the much lower resistivity underlying layers. In both areas the high resistivity blocks seem to float in the low resistivity matrix.

A good fit of the mapping and electric section, completed with sedimentologic observations all suggest that the blocks should be interpreted as olistholiths. Alpine analogies suggest, that these olistoliths were formed not in an extensional, but a compressional regime (Frisch and Gawlick 2003).

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The New Structural Model of the Pavlov Hills (Western Carpathians, Czech Republic)

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The Pavlov Hills are situated in the western margin of the outer units of the Carpathian Flysch belt. The Ernstbrunn Limestone is suitable for the study of the paleostress analysis and the mechanics of brittle deformation (Poul and Melichar 2003). It represents the top member of the Jurassic carbonate facies of the Ždánice Unit of the upper Tithonian to Tithonian/Berriasian age (Houša and Řehánek 1987). The structure of Pavlov Hills Klippen Belt is connected with thrusting of Carpathian acretionary wedge. Thrusts are subparalell to bedding and striking in NE–SW direction and slightly dipping to the SE. Thrust sheets are crosscut by set of steep faults striking mostly NW–SE. The thrusts and transversal faults divide the limestone beds into several separated blocks forming the Pavlov Hills.

Fault/slip data were collected at eight localities (Turold quarry, Turold cave, Damoklova cave, Svatý kopeček [St. Hill] – southern block, Svatý kopeček – central block, Svatý kopeček – northern block, Janičův vrch quarry and Stolová Hill). Every fault plane and striae were precisely described. Special attention was focused to fault planes with two or more striations and to its time relations.

Polyphase fault/slip data set was subjected to new stress inversion procedure using PASCAL program "Přímá inverse (Direct Inversion)" (Hroza 2003). Numerically separated clusters were compared by macroscopically obtained fault-plane features to natural groups of faults reactivated under the same stress conditions. Up to seven stress states could be delimited (T0–T6, see figure). Very wide striae (up to several decimeters) is typical for the oldest faults. The younger striae is usually finely spaced. The faults reactivated by state T4 and/or later are characterized by elongated or smashed black manganese tree-like coatings.

Results of the fault-plane geometry and kinematic analysis were used for construction of new geological map (see figure) showing new tectonic model of the area.

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