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# Structural Transformations of Interstratified Illite-Smectites from Dolná Ves Hydrothermal Deposits: Dynamics and Mechanisms

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**Abstract:** Structural transformations of illite-smectite samples of hydrothermal genesis with increasing contents of illite layers were studied by X-ray powder diffraction. The samples were K-saturated and subjected to wetting and drying cycles to increase three-dimensional structural ordering. Diffraction profiles were analyzed with the help of a specially devised computer program based on the approximation of individual diffraction reflections by “bell-shaped” functions, with minimization of the differences between experimental and simulated profiles. The data indicate that the transformations of these illite-smectite samples were accompanied not only by variations in the proportion of illite and smectite layers and in the pattern of their alternation, but also by a change in structure within 2:1 layers.

**Key Words:** Cis-octahedron • Illite-smectite • Illitization • Phase Transformations • Trans-octahedron

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