Swelling soils in the road structures

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Abstract. There are frequent problems with the soil swelling in the road construction in the past time. This phenomenon is known for decades. This situation is notably given by insufficient knowledge of this problem and difficulties with input parameters describing the swelling process. The paper in the first part proposed regression relations to predict swelling pressure, time of swelling and swelling strain for different initial water contents for soils and improvement soils. The relations were developed by using artificial neural network and QCExpert Professional software (on the data from site investigations by GeoTec-GS, a.s. and experimental data from CTU in Prague). The advantage of the relations is based on using the results of the basic soil tests (plasticity index, consistency index and colloidal activity) as input parameters. The authors inform the technical public with their current knowledge of the problems with the soil swelling on the motorway in the second part of the paper.