

# Cauchy problem for integrable discrete equations on quad-graphs

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Initial value problems for the integrable discrete equations on quad-graphs will be discussed. We give a geometric criterion of when such a problem is well-posed. In the basic example of the discrete KdV equation we propose an effective integration scheme based on the matrix factorisation problem and investigate the interaction of the solutions with the localised defects in the regular square lattice. Some examples of kinks and solitons on various quad-graphs, including quasiperiodic tilings, will be presented.

The talk is based on a joint work with V.E. Adler.