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*Contact transformations for difference equations*

Contact transformations for ordinary differential equations are transformations in which the new variables  $(\tilde{x}, \tilde{y})$  depend not only on the old variables  $(x, y)$  but also on the first derivative of  $y$ . The Lie algebra of contact transformations can be integrated to a Lie group. The purpose of this talk is to extend the definition of contact transformations to ordinary difference equations. We will provide an example showing that these transformations do exist. This is a joint work with D. Levi and P. Winternitz.