

## Structural Description of a Class of Involutive Uninorms by Skew-Symmetrization

**Sándor Jenei**

Institute for Discrete Mathematics and Geometry  
Technical University of Vienna  
Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria  
e-mail: jenei@logic.at  
Institute of Mathematics and Informatics  
University of Pécs  
Ifjúság u. 6, H-7624 Pécs, Hungary  
e-mail: jenei@ttk.pte.hu

*Abstract: First we shall give a brief overview on the main geometrical aspects of the study of residuated lattices. Next, we present the structural description of both  $e$ -involutive uninorms on  $[0; 1]$  and  $e$ -involutive finite involutive uninorm chains. This description involves a striking new construction, called skew-symmetrization, in which one has to leave the accustomed residuated setting, and has to enter a co-residuated setting too. So, for the description of residuated structures one needs as well co-residuation; it is a surprising observation in the theory of residuated lattices; a theory which goes back to 70 years*