Pataki, G. [Pataki, Gergely] (H-LAJO); **Száz, Á.** (H-LAJO)
A unified treatment of well-chainedness and connectedness properties. **(English summary)**

Summary: "A unified treatment of some old and new well-chainedness and connectedness properties of the most basic topological structures (such as closure, proximities and uniformities, for instance) is offered in the framework of relators (families of binary relations) and their fundamental refinements.

"The results obtained show that the various connectedness properties are actually particular cases of Cantor's well-chainedness property neglected by several authors. Moreover, they show that the hyperconnectedness introduced by L. A. Steen and J. A. Seebach is a particular case of our paratopological connectedness."

The paper is organized as follows (see page 102): Introduction; 1. A few basic facts on relations and relators; 2. Set-valued functions and unary operations for relators; 3. Some important set-valued functions for relators; 4. Some important unary operations for relators; 5. Some further results on the basic set-valued functions and unary operations for relators; 6. Some important binary operations for relators; 7. Some further important binary operations for relators; 8. Symmetric, transitive, filtered and compact relators; 9. Mild continuities of relations in relator spaces; 10. Some basic properties of the Davis-Pervin relations; 11. Symmetrizations of the Davis-Pervin relations; 12. Well-chainedness of arbitrary relators; 13. Well-chainedness of refinement relators; 14. Connectedness of arbitrary relators; 15. Connectedness of refinement relators; 16. Some further results on the connectedness of refinement relators; 17. Relationships between well-chainedness and connectedness properties; 18. A few illustrating examples; 19. A summary of implications; References.

Recall that by a "relator" on X the authors mean a non-void family of binary relations on the non-void set X [see Á. Száz, Acta Math. Hungar. **50** (1987), no. 3-4, 177–201; MR0918156 (88j:54043)].

The list of references contains 76 titles of papers (or books), of which 28 are authored (or coauthored) by at least one of the authors of the paper under review.

Reviewed by *Stoyan Nedev*