Tolerances on posets

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The concept of a tolerance relation, shortly called tolerance, was studied on various algebras since the seventies of the twentieth century (cf. e.g. [1] and [7]). Since tolerances need not be transitive, their blocks may overlap and hence in general the set of all blocks of a tolerance cannot be converted into a quotient algebra in the same way as in the case of congruences. However, G. Czédli [8] showed that lattices can be factorized by means of tolerances in a natural way, and J. Grygiel and S. Radeleczki [9] proved some variant of an Isomorphism Theorem for tolerances on lattices. The aim of the present talk is to extend the concept of a tolerance on a lattice to posets in such a way that results similar to those obtained for tolerances on lattices can be derived.

References

- I. Chajda. Algebraic Theory of Tolerance Relations, Palacký Univ. Press, Olomouc 1991.
- [2] I. Chajda, G. Czédli, and R. Halaš. Independent joins of tolerance factorable varieties, Algebra Universalis 69 83--92 (2013)
- [3] I. Chajda, G. Czédli, R. Halaš, and P. Lipparini. Tolerances as images of congruences in varieties defined by linear identities, Algebra Universalis 69 167--169 (2013)
- [4] I. Chajda and H. Länger. Filters and congruences in sectionally pseudocomplemented lattices and posets, Soft Computing 25 8827--8837 (2021)
- [5] I. Chajda and H. Länger. *Tolerances on posets*, Miskolc Math. Notes 24 725-736 (2023)
- [6] I. Chajda, J. Niederle, and B. Zelinka. On existence conditions for compatible tolerances, Czechoslovak Math. J. 26 304--311 (1976)
- [7] I. Chajda and B. Zelinka. *Tolerance relation on lattices*, Casopis Pest. Mat. 99 394--399 (1974)

- [8] G. Czédli. Factor lattices by tolerances, Acta Sci. Math. (Szeged) 44 35--42 (1982)
- [9] J. Grygiel and S. Radeleczki. On the tolerance lattice of tolerance factors, Acta Math. Hungar. 141 220-237 (2013)