1046-03-337   **Lavinia Corina Ciungu*** (`lcciungu@buffalo.edu`), 107 Springville Avenue Ap.1, Buffalo, NY 14226. *Convergence with a fixed regulator in residuated lattices.*

The notion of convergence in multiple-valued logic algebras proved to be very important for the study of continuous states on these structures. Various concepts of convergence have been defined on lattice-ordered algebras. For a lattice ordered-group, the order convergence is studied by Papangelou and alpha-convergence is presented by Ball. The sequential convergence on generalized Boolean algebras is defined and studied by Jakubik. The order-convergence in case of MV-algebras is presented by Ball and various kinds of Cauchy completions of MV-algebras are studied by Georgescu, Liguori, Martini. Cernak introduced the convergence with a fixed regulator for MV-algebras. We investigated the convergence with a fixed regulator for the particular case of perfect MV-algebras. The notion of similarity convergence in a residuated lattice was introduced by Georgescu, Popescu. In this paper we introduce the notion of convergence with a fixed regulator in residuated lattices and study some properties of this convergence. We prove that every sequence of an Archimedean residuated lattice has a unique v-limit. We also prove that a complete residuated lattice is also v-Cauchy complete. The corresponding topology of the v-convergence is constructed. (Received August 26, 2008)