

A report on the short term research visit in the University of Amsterdam

I visited the University of Amsterdam in the period of 1 June - 10 June, 2014. The visit was specially meant to do some research work under Prof. Benedikt Loewe. In that period we investigated the *ordinal numbers* and some of their properties in an *algebra-valued model* of a *paraconsistent set theory*.

The research work done on the ordinal numbers in that visit is the major part in the paper “Ordinals in an Algebra-Valued Model of a Paraconsistent Set Theory” in Banerjee, M. and Krishna, S., editors. *Logic and Its Applications, 6th International Conference, ICLA 2015, Mumbai, India, January 8–10, 2015, Proceedings*, Lecture Notes in Computer Science, Vol. 8923. Berlin: Springer-Verlag, pp. 194 - 205. We also worked on the properties of natural numbers in that same model. In particular, after defining the *natural number-like elements* we emphasized on the *Mathematical Induction*, the arithmetic of natural numbers etc. We also did some work on the *De-paraconsistencification* of a formula in the language of the above mentioned paraconsistent set theory. The later works are not published yet as we are doing some more research concerning those areas.

Prof. Benedikt Loewe and I together finished some of the final research works for the paper “Generalized Algebra-Valued Models of Set Theory”, *The Review of Symbolic Logic*, Vol. 8, Number 1, March 2015, pp. 192 - 205. The research done on the ordinal numbers, mentioned above, is an extension of this paper.

Since Prof. Benedikt Loewe is the Joint Supervisor of my Ph.D. programme, it was very much important to me to visit him for clearing some doubts and doing some new research works. Whatever was investigated in that short term research visit, is included in my Ph.D. project. Finally I want to thank the Indo-European Research Training Network in Logic for giving me grant for this research visit in the University of Amsterdam, The Netherlands.