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Paola Toto* (paola.toto@unile.it), Via Cappelli, 33, 35123 Padova, Padova, Italy, and **Maria Emilia Maietti** and **Giovanni Sambin**. *Many-valued structures for constructive topology*.

Sambin in his forthcoming book, *The Basic Picture a structural basis for constructive topology* (Oxford University Press, to appear), introduces a new topological theory, called "The Basic Picture". In this theory both the notion of topological space and its point-free version are generalized. The concept of overlap algebra is also introduced in order to put in algebraic form the properties needed to define the new topological structures. The ultimate goal of our work is to generalize such topological notions in the context of many-valued sets. In many-valued set theory sets are built by using propositions evaluated in an algebraic structure. To reach our goal a key point is to check whether the original algebrization of Sambin's topological notions can be considered also as the algebrization of their many-valued version. We prove that this is the case if and only if we take an overlap algebra as the underlying structure of truth values. (Received July 14, 2009)