FULLNESS AND MIXING PROPERTY FOR BOOLEAN VALUED MODELS IN TERMS OF SHEAVES AND BUNDLES

MORENO PIEROBON

ABSTRACT. Besides being one of the classical approaches to forcing, boolean valued models provide a flexible tool to produce a variety of structures. From a categorial point of view, they strongly resemble to sheaves. In fact, Monro [1] proved that boolean valued models are equivalent to some kind of presheaves. Furthermore, in this equivalence boolean valued models with the mixing property are sheaves. The mixing property is a condition satisfiable by boolean valued models and it is important since it implies the fullness property, the latter allowing to control the semantics when quotienting a boolean valued model by an ultrafilter.

In this talk we present the equivalence betweeen boolean valued models and presheaves; then we use it to describe the mixing property and the fullness property in terms of bundles.

This is a joint work [2] with Matteo Viale.

REFERENCES

[1] G. P. Monro. Quasitopoi, logic and Heyting-valued models. *J. Pure Appl. Algebra*, 42(2):141–164, 1986.
[2] M. Pierobon and M. Viale. Boolean valued models, presheaves, and étalé spaces, 2020. arXiv:2006.14852.