

Quotients in hyperdoctrines

Giuseppe Rosolini *

Abstract. We apply tools from categorical logic to give an abstract description of constructions used to give models of theories for constructive mathematics based on intensional type theory. We show that the key concept is that of an elementary hyperdoctrine in the sense of Lawvere and we describe a notion of quotient completion as a left biadjoint to a fairly natural forgetful 2-functor. Instances of that notion are the exact completion on a category with products and weak pullbacks as well as models of various extensional type theories.

*Joint work with Maria Emilia Maietti.