

Topologies as forms

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A form over a given category is a faithful amnestic functor whose codomain is that category. Many different types of structures on a category can be usefully represented as special types of forms. In this talk we describe forms which represent topologies on a set, viewed as structures on the poset of subsets of the set. It turns out that these forms have properties similar to the subobject forms in categories having enough projectives, with open sets corresponding to projective objects. We also say a few words about representing Grothendieck topologies as forms and explain why a frame is the same as a poset with finite meets, whose form of subobjects represents a Grothendieck topology.