

Proper stacks and costacks

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It is well known that distributions on a manifold define a sheaf. In fact, this follows immediately from the fact that test functions (smooth functions with compact support) form a cosheaf, the dual notion of a sheaf. More generally, given any flabby sheaf, one naturally defines a cosheaf by taking sections with compact support. Its (eventually topological) dual is then naturally a sheaf.

The categorical counterpart of a flabby sheaf is a proper stack (in the sense of Kashiwara-Schapira). In this talk, based on a joint work with I. Waschkes, I will show that compactly supported sections of a proper stack define a costack, the categorical counterpart of a cosheaf. As a byproduct, we recover that ind-sheaves form a stack.