

# A Presheaf Environment for the Explicit Fusion Calculus

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**Abstract** Name passing calculi are nowadays one of the preferred formalisms for the specification of concurrent and distributed systems with a dynamically evolving topology. Despite their widespread adoption as a theoretical tool, though, they still face some unresolved semantic issues, since the standard operational, denotational and logical methods often proved inadequate to reason about these formalisms. A domain which has been successfully employed for languages with asymmetric communication, like the  $\pi$ -calculus, are presheaf categories based on (injective) re-bellings, such as  $Set^{\mathbb{I}}$ . Calculi with *symmetric* binding, in the spirit of the *fusion calculus*, give rise to novel research challenges. In this work we examine the *explicit fusion*

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