

Elementary fibrations and quotients of groupoids

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Elementary fibrations are the coalgebras for a colax idempotent 2-comonad, which generalises the 2-comonad for elementary doctrines (= faithful elementary fibrations). In this talk I will first describe the construction of the 2-comonad, which involves the notion of groupoid internal to a fibration, its generalisation to categories and setoids, and connections to descent theory. Then I will show how the structure map of a (pseudo)-algebra for the lax idempotent 2-monad induced by the 2-comonad on its coalgebras computes effective quotients of groupoids, generalising a similar result in the faithful case. This is based on joint work with Fabio Pasquali and Pino Rosolini.