
Hopf25

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Parallel sessions, Forum G

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16h-16h25

Bicategorical Doi-Takeuchi correspondence and locally cleft non-commutative principal bundles

In 1980s Doi and Takeuchi exhibited a correspondence between cocycled crossed products and cleft extensions. I show how this correspondence extends to a bicategorical equivalence, which as a particular case specializes to a presentation of locally cleft Hopf algebraic extensions of corings with a grouplike element by explicit cocycle data. In particular, the earlier examples by the speaker and others of locally cleft noncommutative principal bundles are special cases of the latter. This includes both the localities in the sense of noncommutative open covers described by flat localizations as well as those in the sense of closed covers described by ideals.