

The Zappa–Szép product of a Fell bundle by a groupoid

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The Zappa–Szép (ZS) product originated as a generalization of the semi-direct product of groups. Keeping in mind the relationship of such semi-direct products to crossed products of C^* -algebras, we define an analogue of ZS products for operator algebras: if a groupoid H acts in a sufficiently nice way on a Fell bundle B over G , we construct a new Fell bundle over the ZS product of the groupoids G and H . For this new "ZS Fell bundle", there is a natural relationship between its representations and those representations of B and H that are covariant in an appropriate sense. Furthermore, this ZS construction lends itself to generalizations of imprimitivity theorems à la Kaliszewski–Muhly–Quigg–Williams.

based on joint works with Boyu Li (New Mexico State University)

Bio: Anna Duwenig earned her PhD from the University of Victoria, Canada, in 2020 under supervision of Heath Emerson and Marcelo Laca. After a 3-year postdoc at the University of Wollongong in Australia, she is now working at KU Leuven in Belgium as FWO senior postdoctoral fellow. Her research deals with C^* -algebras, with a focus on Cartan subalgebras, Fell bundles, and self-similarity.