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Noncommutative spaces at finite resolution

Thursday 29 September 2022 09:00 (1 hour)

We extend the traditional framework of noncommutative geometry in order to deal with two types of approximation of metric spaces. On the one hand, we consider spectral truncations of geometric spaces, while on the other hand, we consider metric spaces up to a finite resolution. In our approach the traditional role played by C-*algebras is taken over by so-called operator systems. We consider C*-envelopes and introduce a propagation number for operator systems, which we show to be an invariant under stable equivalence and use it to compare approximations of the same space. We illustrate our methods for concrete examples obtained by spectral truncations of the circle, and of metric spaces up to finite resolution.

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