BARTOSZ ZIELINSKI, Department of Theoretical Physics II, Uniwersytet Lodzki, Pomorska 149/153, 90-236 Lodz, Poland; Instytut Matematyczny PAN, ul. Śniadeckich 8, 00-956 Warszawa, Poland

Finite closed coverings of compact quantum spaces

We show that a projective space $P^\infty(Z/2)$ endowed with the Alexandrov topology is a classifying space for finite closed coverings of compact quantum spaces in the sense that any such a covering is functorially equivalent to a sheaf over this projective space. In technical terms, we prove that the category of finitely supported flabby sheaves of algebras is equivalent to the category of algebras with a finite set of ideals that intersect to zero and generate a distributive lattice. In particular, the Gelfand transform allows us to view finite closed coverings of compact Hausdorff spaces as flabby sheaves of commutative C^*-algebras over $P^\infty(Z/2)$. As a noncommutative example, we construct from Toeplitz cubes a quantum projective space whose defining covering lattice is free.