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*Perturbative algebraic quantum field theory: Where we are*

Perturbative algebraic quantum field theory (pAQFT) is a mathematically rigorous framework that combines methods of perturbation theory (e.g. using formal power series in  $\hbar$  and Feynman graphs expansion) with rigorous axioms, generalizing those of algebraic quantum field theory (AQFT). This opens up the way to treat a wide range of QFT models, also on curved spacetimes, including gauge theories. There have also been applications to effective quantum gravity and quantum cosmology. More recently, we have established some results on convergence and in the future we hope to use pAQFT as a starting point to go beyond perturbation theory.