

## Are the Elementary Particles Really Elementary: OPE Algebras in Quantum Field Theory

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**Abstract.** In Quantum Field theory (QFT) and in the theory of elementary particles two closely related notions are considered: composite fields and composite particles, respectively. In the field picture the compositeness is conceptually fully understood by the notion of Operator Product Expansion (OPE), which has been introduced by Nobel laureate Kenneth Wilson in 1964. Intuitively, the OPE describes the product of quantum fields at short distances in terms of other (composite) quantum fields. Afterwards, it has been realized that the OPE is a new algebraic structure, which itself can provide an alternative definition of QFT. In this talk I shall make a popular level review of the above mentioned basic notions, and in conclusion I shall briefly present a result of mine on this topic.