New Paradigms in Quantum Field Theory

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Quantum field theory is a theoretical framework that unifies quantum mechanics and special relativity. It was developed to describe the interactions of elementary particles and it has successfully explained most of the experimental results and the fundamental nature of our universe. In this talk, I will first present a history of the development of theoretical physics and that of quantum field theory. Then, I will present the main problems of the current theoretical frameworks and new efforts and ideas to go beyond quantum field theory.