

Abstract for an Invited Paper
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Unraveling the Mysteries of Nature in the Smallest Dimensions

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What the universe is made of and how it works have always been the basic questions in the heart of particle physics. How does the quantum world connect to the cosmic scale? What is the structure of space-time? Do all the forces become one? High-energy particle accelerators constitute a powerful tool in the quest to understand the nature of the universe, by recreating the particles and forces of its early state. As an example, we will present the case of the electroweak symmetry and how we are striving to understand it at the highest energy accelerators, the Tevatron at Fermilab and the Large Hadron Collider at CERN.