Preface

This volume consists of contributions to the *Ninth Meeting on CPT and Lorentz Symmetry*, CPT'22, which was hosted by the Physics Department at Indiana University, Bloomington May 17–26, 2022 as an online event. In the tradition of the eight previous conferences, presentations at CPT'22 covered current topics in, and future prospects for, experimental and theoretical studies of spacetime-symmetry violations.

The reports collected in this volume were solicited from participants who delivered invited lectures, short talks, or poster presentations. Experimental topics include astrophysical observations of neutrinos, photons, cosmic rays, pulsars, and gravitational waves; investigations at accelerators and storage rings involving neutral mesons, muons, quarks, and flavor-changing processes; gravity tests in the laboratory and in the solar system; spectroscopic studies of ions, atoms, molecules, and exotic atoms; measurements involving spin motion; comparative tests between matter and antimatter; lasers and masers; measurements involving neutrons; investigations with cavities, oscillators, and resonators; and neutrino oscillations, propagation, and endpoint measurements. Theoretical and phenomenological topics covered involved the identification of signatures for CPT and Lorentz violation in particle physics, electromagnetism, and gravity; mechanisms and toy models for spacetime-symmetry breakdown; studies in field theory, gravitation, and particle physics; and condensed-matter applications. The contributions are arranged by schedule starting with invited lectures, followed by short talks, and concluding with poster presentations.

This conference would not have been possible without the support of Alan Kostelecký. I am also enormously grateful for the assistance from numerous colleagues including Robert Bluhm, Neil Russell, Marco Schreck, Nathan Sherrill, River Govin, Zonghao Li, and Connor Petway. Financial support for CPT'22 by the Indiana University Center for Spacetime Symmetries (IUCSS), the Indiana University Office of the Vice Provost for Research, and the U.S. Department of Energy is gratefully acknowledged.

Ralf Lehnert
November 2022