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New Era in Fundamental Physics with Antihydrogen

Tuesday 9 September 2025 09:00 (30 minutes)

Antihydrogen—a bound state of an antiproton and a positron—offers a platform for precision tests of fundamental symmetries in nature. Over the past two decades, experimental progress has transformed antihydrogen studies from the demonstration phase into the precision measurement phase.

In this talk, I will review recent advances in antihydrogen research, with a focus on results from the ALPHA experiment. I will also share my personal perspectives on future directions, including efforts toward the simultaneous confinement of antihydrogen and hydrogen ("ALPHA Next Generation"), and the development of antihydrogen fountains and interferometers through the HAICU project at TRIUMF.

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