

SPCS 2026: 70th Anniversary of the Discovery of Parity Nonconservation and Prospects in Frontier Physics & SPCS 2026 Summer School

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Type: **Plenary Talk**

Par(i)ty Tricks!

Tuesday, 23 June 2026 17:10 (40 minutes)

After reviewing the familiar definition of parity transformations and why they are explicitly broken in the standard model, I will discuss three ways that parity can be upgraded to being either a spontaneously broken or an exact symmetry. The resulting theories remain as interesting, aesthetically-driven speculations for physics beyond the standard model that can be searched for experimentally and/or observationally. One of them – mirror matter – was actually briefly discussed by T.D. Lee and C.N. Yang at the end of their Nobel-prize-winning paper on parity violation.

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