Antimatter at CERN

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Dirac, 1928...

\[
(i\hbar \cdot \nabla - m)\psi = 0
\]
Anderson, 1932...
I think that the discovery of antimatter was perhaps the biggest jump of all the big jumps in physics in our century.

— Werner Heisenberg —
Why don’t we see antimatter?
Charge conjugation swaps positive and negative charges.

Parity reversal swaps up and down, left and right, forwards and backwards.

Time reversal swaps past and future.
We have some clues… but not enough
How do we create antimatter?
How do we create antimatter?
How do we create antimatter?
How do we capture antimatter?
How do we store antimatter?
The experiments

ASACUSA

ATRAP

ALPHA

BASE

AEgIS/GBAR

ACE
What are we going to see next?

Low Energy Ion Ring