

**CP esatta**

The diagram illustrates the exact CP transformation. It shows a square with a checkerboard pattern (top-left white, top-right black, bottom-left black, bottom-right white) transforming via a blue arrow labeled 'P' into a square with a checkerboard pattern (top-left black, top-right white, bottom-left white, bottom-right black). From the top-left square, a red arrow labeled 'C' points down to a square with a checkerboard pattern (top-left black, top-right white, bottom-left white, bottom-right black). From the top-right square, a red arrow labeled 'C' points down to a square with a checkerboard pattern (top-left white, top-right black, bottom-left black, bottom-right white). A diagonal blue arrow labeled 'CP' points from the top-left square to the bottom-right square, and a diagonal red arrow labeled 'CP' points from the top-right square to the bottom-left square.

**CP violata**

The diagram illustrates CP violation in the decay of a  $B^0$  meson into two pions. It shows a cycle of four states:

- Top-left:  $B^0$  meson (white/black) decaying into  $\pi^+ \pi^-$  (black/white).
- Top-right:  $\pi^+ \pi^-$  (white/black) state.
- Bottom-right:  $B^0$  meson (black/white) state.
- Bottom-left:  $\pi^+ \pi^-$  (black/white) state.

Transitions are indicated by arrows:

- Blue arrows labeled  $P$  (production) connect top-left to top-right and bottom-left to bottom-right.
- Red arrows labeled  $C$  (charge conjugation) connect top-left to bottom-left and top-right to bottom-right.
- A diagonal double arrow labeled  $CP$  connects top-left to bottom-right, with the red and blue lines being slightly offset, indicating CP violation.