

Let us imagine a dog spinning left while chasing its tail in a front of a mirror. Its reflection will be a dog-twin spinning right. Were this reflection be growing younger and made of anti-matter, then this picture would illustrate the *charge - parity - time* (CPT) symmetry. CPT is a fundamental symmetry of physical laws under the simultaneous transformations of charge conjugation (C), parity transformation (P), and time reversal (T). CPT is the only combination observed to be an exact symmetry of nature at the fundamental level.

We can test CPT violations in systems made of matter and antimatter, which are produced in particle factories. One of those is the DAΦNE accelerator, located in Frascati near Rome, where particles called kaons are created. Those matter-antimatter systems are extremely sensitive to effects of symmetries' violations. In the past, a CP symmetry violation was observed in this system.

The proposed research is focused on searching for a CPT symmetry violation in data register by the KLOE-2 detector localized at the DAΦNE accelerator.