

DISCRETE 2014: Fourth Symposium on Prospects in the Physics of Discrete Symmetries



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High sensitivity tests of the Pauli Exclusion Principle with VIP2

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The Pauli Exclusion Principle (PEP) is one of the most fundamental rules of nature and thus a major pillar of modern physics.

According to many observations PEP must be extremely well fulfilled.

Nevertheless numerous experimental investigations were performed to search for a small PEP violation. The experiment VIP2 at the Gran Sasso underground laboratory is designed to test the Pauli Exclusion Principle for electrons with high sensitivity by searching for forbidden X-ray transitions in copper atoms.

VIP2 aims to improve the PEP violation limit obtained with our preceding experiment VIP by orders of magnitude.

The experimental method, comparison of different PEP tests based on different assumptions and the developments for VIP2 will be presented.

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