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Search for a violation of the Pauli Exclusion Principle with electrons

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The Pauli Exclusion Principle (PEP) is the foundation for our understanding of physics where systems of fermions are concerned. Therefore, it is important to make precision tests of the PEP. In a pioneering experiment, Ramberg and Snow supplied an electric current to a Cu target, and searched for PEP violating atomic transitions of the "fresh" electrons from the current. The non-existence of the anomalous X-rays from such transitions then set the upper limit for a PEP violation. The VIP (VIolation of Pauli Exclusion Principle) experiment improved this method. The experiment and the results will be presented. The preliminary results of the first data taking period of the follow-up experiment VIP2 will be presented.

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