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Testing spin statistics at Gran Sasso underground laboratory

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The VIP experiment aims to perform high precision tests of the Pauli Exclusion Principle (PEP) for electrons, and look for a possible small violation. The method consists in circulating a current in a copper strip, searching for the X radiation emission due to a prohibited transition (from the 2p level to the 1s level when this is already occupied by two electrons). The energy of the transition would differ from the standard $K\alpha$ ($2p \rightarrow 1s$) of about 300 eV. Two data taking periods were performed at the LNGS of INFN. The first VIP run used Charged Coupled Devices; the upgraded experiment VIP2, presently taking data, exploits the higher resolution triggerable Silicon Drift Detectors.

The newest results from the VIP2 acquired data will be presented also analysed in view of an improved description of the probe electrons path inside the copper target.

Content of the contribution

Both

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