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New concepts in tests of the Pauli Exclusion Principle in bulk matter

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The standard scheme of several tests of the Pauli Exclusion Principle in bulk matter - both in the experiment and in the subsequent data analysis - has long been based on the seminal paper by Ramberg and Snow (RS) (Phys. Lett. B238, 439 (1990)). The ideas exposed in that paper are so simple and immediate that they have long gone unchallenged. However, while some of the underlying approximations are still valid, other parts of the RS paper must be reconsidered. In this talk I describe some new concepts that are related to the motion of the electrons in the test metal (the “target” of the experiment) and which have been recently studied in the framework the VIP Collaboration.

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