MEASUREMENT OF THE PROBABILITY OF THE $\mu^- + He^3 \rightarrow H^3 + \nu$ REACTION. FINAL RESULTS

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IN previous work[1] we reported on the investigation of the reaction

$$\mu^- + He^3 \rightarrow H^3 + \nu. \qquad (1)$$

We found then 90 events belonging to the reaction (1). In this article we present the final results of our experiment with a diffusion chamber, filled with He^3, based on about 200 events belonging to the given reaction. The experimental method, treatment of results, and notation remain the same as in our previous work. The complete results are summarized in the table.

The final result for the probability of reaction (1) is

$$(\Lambda_{He^3})_{exp} = (1.41 \pm 0.14) \cdot 10^3 \text{ sec}^{-1}.$$

This value is in full agreement with our previous, less precise result.

The deductions that can be made on the basis of the known values of the coupling constants do not differ from those we gave before. The muon-electron symmetry in interaction with a nucleon, lying at the base of the universal theory, is not contradicted by our experimental results, obtained with 10% accuracy.

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Data on muons stopped in He^3

Method	Number of events from reaction (1) ($L \geq 20$ mm)		Number of μe-decays ($L \geq 20$ mm)			
	recorded	with correction for efficiency	electron seen	electron not seen	correction for mesic atoms of C and O	accepted for the calculation
I	182,2±16,9	209.4±20.0	49973±372	18171±1008	−681±204	67463±1093
II	171.0±15.5	211.1±20.7				

[1] Zaĭmidoroga, Kulyukin, Pontecorvo, Sulyaev, Falomkin, Filippov, Tsupko-Sitnikov, and Shcherbakov, JETP 43, 355 (1962), Soviet Phys. JETP 16, 255 (1963).

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