

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

The theory of the failure of magnetic fusion¹ LEONID E. ZAKHAROV, Princeton University, PPPL — In the physics of the 20th century, fusion represents an extraordinary failure which eroded expectations of society on an “un-exhaustible” energy source. The question is if these 50 years of research did really prove that fusion will be forever a “carrot” on a stick and always 35 years from its implementation. When a person is asking fusion people why this program is full of broken promises, he (besides conventional complaints on the lack of funding) is typically getting the answer that the problem itself is the most difficult one that physics ever faced. In the FSU, such characterizations were done as early as in the 60s by Lev Artsimovich, the leader in the field. This view is only partially applicable in the 21st century. Since the times of Artsimovich, fusion, as a “difficult” problem, has been converted into the “complicated” one. The presented theory makes a clear distinction between these two kinds of problems, which require significantly different management approaches, and explains the current stagnation in magnetic fusion by the lack of understanding this crucial difference.

¹Supported by US DoE contract No.DE-AC020-76-CHO-3073

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Date submitted: 20 Jul 2007

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