ANALYSIS OF SPECTRAL LINE CONTOURS IN DIAGNOSTICS OF COMPLEX PLASMA

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Experimental study results of complex composition plasma formed during interaction with the wall of laboratory setups are important for applications and materials science. Such setups include the PLM setup developed at MPEI [1], for plasma testing of materials, and the erosive discharge in a capillary, studied at the JIHT RAS [2]. When in direct contact with the plasma, the plasma channel surface or the test sample undergoes intense erosion or structural rearrangement. At the same time, the wall material enters the plasma itself, forming complex emission spectra, whose processing and interpretation are difficult: spectral lines are often superimposed on each other, can differ in intensity by several orders of magnitude, have different "normal temperatures", and the radiation can be "locked" [1, 2]. In this report we propose methods for taking these features into account and using them for diagnostic purposes.

This work was supported by the Ministry of Science and Higher Education of the Russian Federation (State Assignment No. 075-00270-26-00 and FSWF-2025-0001).

[1] Kavyrshin D I, Fedorovich S D and et al V P B 2023 *Fusion Science and Technology* **79**(4) 421–431
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