REVIEW
by the domestic scientific advisor
on the dissertation work of Gabitova Ilfa Azamatovna
«Structure and evolution of circumstellar matter in Be stars»
for the PhD degree in the educational program
«8D05307 – Physics and Astronomy»

The research presented by Ms. Gabitova addresses a highly relevant topic in modern astrophysics: understanding the impact of binary companions on the structure and evolution of circumstellar disks around classical Be stars. The specific focus on systems where disk asymmetries are phase-locked with the orbital period, such as κ Draconis and HD 698, was a choice made to isolate the role of binary interaction, moving beyond models developed for single stars.

The primary strength of this work lies in the application of Doppler tomography. Ms. Gabitova demonstrated a strong command of the entire research process, from the reduction of high-resolution spectroscopic data using IRAF and Python to analysis techniques including radial velocity measurements, period searches, and the reconstruction of Doppler tomograms using maximum-entropy regularization.

The study provides one of the first detailed applications of Doppler tomography to monitor disk evolution in Be binaries, and the results from HD 698 are genuinely pioneering. The methodology developed and documented in this work has considerable practical significance, offering a reproducible, end-to-end methodology for future studies of similar systems.

Ms. Gabitova has authored or co-authored three publications in a Q2 journal, which attests to the quality and acceptance of her research by the international scientific community. Her active participation in international conferences further demonstrates her ability to present and discuss her findings effectively.

Throughout the course of her candidacy, Ms. Gabitova has shown independence, initiative, and problem-solving skills. She has proven capable of conducting a sustained and challenging scientific investigation from start to finish.

In conclusion, I recommend that Gabitova Ilfa Azamatovna be awarded the PhD degree, based on the research work she has done over the course of three years. The dissertation work contains elements of significant scientific novelty and makes a valuable contribution to the field of stellar astrophysics.

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