Calculation of the heat-loaded vacuum window at the "Fast Processes" beamline at the SRF SKIF synchrotron

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As a result of the design and development of the Siberian Circular Photon Source (SRF SKIF), 6 stations of the first stage are expected to be commissioned in 2024. Two of which will used superconducting wigglers as synchrotron radiation (SR) source. These wigglers will have a high photon flux, required at these stations. But at the same time, they emit a large amount of heat—about 40 kW. One of the problems encountered during designing is the problem of heat removal from the first elements on SR beam, such filters and vacuum windows. In this work, we present the results of thermal calculations performed in the ANSYS Fluent for thermal filters and vacuum windows at the "Fast Processes" beamline.