

Concept of a new approach in thermographic measurements for plasma-wall interaction studies on KTM tokamak

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In the paper is described concept of non-contact temperature measuring technique of metallic surface is currently being developed for KTM tokamak. Suggested technique is based on using thermographic camera and infrared carbon dioxide laser (CO₂) with 10.6 micrometer wavelength. The pulsed IR laser radiation is used to observe changes in the emissivity of the body. This information will give possibility to make a correction of the thermal measurements of the thermographic camera.

Preliminary experimental results of measurement technique are shown in the paper and discussed. Plans for implementation and testing of measuring technique are also discussed.

The developed technique will be used for an accurate spatial measurement of the heating temperature of the metal surface of the first wall candidate materials under the influence of thermal plasma fluxes on the KTM tokamak.

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