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## THE DIAGNOSTICS SUITE FOR THE ENERGY BALANCE INVESTIGATION AT THE GDT $^{\ast)}$

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The energy balance studies at the Gas Dynamic Trap – a magnetic mirror device – are being continued in the Budker Institute of Nuclear Physics [1]. The goal of these studies is to investigate the distribution of energy losses due to different physical mechanisms, such as gas dynamical outflow of plasma through magnetic mirrors, resonant charge exchange of ions with residual neutral gas in the vacuum chamber, radiation from the plasma and contact of peripheral plasma with radial limiters. Additionally, power that is transferred to energy content of fast ions and warm plasma is estimated to obtain the complete picture of energy distribution in the GDT.

The report presents the diagnostics suite for studying the energy balance in the GDT. The suite includes:

- Thermoresistor-based calorimeters, installed on the limiters [2];
- Pyroelectric bolometers located on one of the plasma absorbers as well as along the entire length of the central cell of the Trap;
- Diamagnetic loops;
- The Thomson scattering diagnostic for measurement of temperature and density of the warm plasma in the central plane of the Trap [3].

The report also presents the first results obtained with the suite.

## References

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