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## THE STATUS OF MHD DIAGNOSTICS ON THE T-15MD TOKAMAK<sup>\*</sup>)

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The T-15MD MHD diagnostics currently consists of two lines of local magnetic probes placed inside the tokamak vacuum vessel (Fig. 1). One line is a set of 39 shape sensors (SS) with a bandwidth of up to 50 kHz (Fig. 2a). The tangential component of the SS is used to detect MHD instabilities. The second line consists of 34 probes with a bandwidth of up to 500 kHz (Fig. 2b). The SSs are located on the inner side of the vacuum vessel wall (Fig. 1a), while the high-frequency probes are placed in a protective thin-walled metal tube (Fig. 1b, c).





Fig. 2. a) Low-frequency magnetic probe (SS), b) high-frequency magnetic probe

Fig. 1. Location of a) low-frequency and b) high-frequency magnetic probes, c) protective thin-walled metal tube

The results of the magnetic probe signals analysis are verified with the data obtained by the multichannel SXR diagnostics and the interferometer. Currently, diagnostics are operating in a routine mode allowing the mode composition analysis of MHD-disturbances with frequencies up to 10 kHz. Fig. 3a shows an example of a spectrogram of a magnetic probe signal in one of the plasma discharges shown in Fig. 3b.



Fig. 3. a) Spectrogram of the signal power density of the magnetic probe SS №20; b) Plasma current, chord electron density of plasma and the magnetic probe SS №20 signal.

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## References

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