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Testing the speed of the FFT using the NVIDIA graphic cards.

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The article shows the limits in the processing speed which are achieved by the modern graphic cards of the NVIDIA type. It also considers the level of the computational errors that registered with FFT and inverse FFT at different plans for their implementation and lack (the absence) of distortion type jitter. A comparison of the speed of the spectral data analysis using different plans and different drivers was carried out on three types of graphic cards NVIDIA GeForce GTX 210, 660M, 680. Also the comparison of the speeds and the processing errors was carried for the mentioned graphic cards and CPU Intel Core I7. Some inconsistencies were found in the recommended technical documentation, which is given on the official NVIDIA website, with parameters of the really (actually) working FFT and inverse FFT plans.

The aim of this work is to determine the possibility of using NVIDIA graphic cards for spectral analysis and processing of radio astronomy data in real time ("on the fly").

Currently, the great demands are made to information analysis in real time or "on the fly". The demands are do to the fact that in the Moore's Law [1] saturation is not observed.

The achieved density of p-n junctions cause the increase of both the clock frequency of digital devices and their capacity. In line with these trends, and, according to the formula of Shannon-Hartley, the throughput capacity of existing and planned registration channels, transmission and processing of the information grows [2, 3].

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