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DIGITAL FILTERING AT FINANCIAL MARKETS IN PROCESS OF TAKING  
DECISION AT FINANCIAL MARKETS

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The quality of social life and profile of technological progress depend on tools which people use. The same situation is in digital filtering (DF). To achieve the best results we have to process signals by modern PC, using the best mathematical models and software. My work is connected with developing software for DF.

Scientists all over the world and me pay more attention at research of financial markets (FM). Maximum interest is given to new technologies in technical analysis (TA). World wide web (WWW) makes it possible to achieve data about markets in Real Time (RT). Historical data and general statistics stay in remote access. Scientists test their trading models in RT and evaluate their efficiency. TA helps create models for decision making at FM. TA uses digital indicators (DI). DI is a datum about process discreet in time. Financial time series (FTS) are examples of TS. I'm researching new modern models of analysis FTS.

Common examples of TS are indicators, oscillators, etc. Usual programs and algorithms use simple TS. This way of development formed couple decades ago, because of low productivity of PCs. Typical example of using DI is moving average (MA). MA is built by different algorithms: simple MA, exponential MA, smoothed MA, linear weighted MA.

Each of them shows average value of physical process in time. Ideal DI have no phase delay. The main goal of my work is to develop new DI using PS and contemporary computer added design (CAD).

All present-day DI don't work well with new data of TS, have poor reflection in critical periods (then TS changes direction of motion). My work makes possible avoid white noise (WN). WN is a disturbances in the whole spectrum of signal. Also my work gets down risks of making wrong decision using DI signal. I achieve my goal by using system of engineering research – MATLAB. MATLAB has powerful package of digital signal processing (DSP) which is called signal processing tool (SPTool).

We can process signal of TS in real-time and analyze its behavior. If MA goes down and signal of TS goes up – it's the best time to sell. In opposite conditions you should buy. You also can rule your account by actions “stop loss” and “take profit”.

I'll try to create and implement other filters (FATL – fast adaptive trend line, SATL – slow adaptive trend line) in MATLAB and build new DI with help understand nature of TSs behavior.