conferenceseries.com SciTechnol

P Titov et al., J Comput Eng Inf Technol 2018, Volume 7
DOI: 10.4172/2324-9307-C1-021

5th International Conference on

Big Data Analysis and Data Mining

June 20-21, 2018 | Rome, Italy

Some experience at supercomputer implementation for signal processing with the aid of ordered filters

P Titov and **V Znak**
Institute of Computational Mathematics and Mathematical Geophysics–SB RAS, Russia

This paper focuses on program realization of order statistic selection filters. In particular, we treat class of weighted order statistic (WOS) filters, and the special filter class of co-phased (CoPh WOS) filters. In the general case, the WOS filters possess a number of advantages in comparison with other filters, in particular, detail and edge preserving filters that are robust to outliers and sample contamination can be constructed. However, WOS filters are nonlinear and a theoretical analysis of their behavior is very difficult. Therefore, the using of the method of statistical trials for selecting the most effective project of the WOS filters (data mining) is drawing attention. Since this is time expensive, the increasing computational productivity is of interest. In this paper, the technique of order filters statistical trials is considered. The approach to the attract of multi-core system for faster performance of the most time consuming parts of algorithm is presented, and results of performance in different cases (consiquental, parallel) are shown.

Biography

P Titov is currently working as a Junior Researcher at The Institute of Computational Mathematics and Mathematical Geophysics of Siberain Branch of RAS. He obtained his Master's degree in 2013 from Novosibirsk State University. His research interest includes geophysics, computational mathematics, mathematical modeling, supercomputers, computational technologies, development of parallel algorithms and parallel programs. He is the author and co-author of eight publications.

tapawel@gmail.com