



# Assignment Seminar

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# **Topic of Seminar Assignment**

Streaming Computation



## Abstract

- These slides contains the summaries of five research papers originating from the topic Domain Streaming Computation
- The research papers are driven online and their summaries have been written individually. The prospect of Streaming Computation are very high powered computers having a large processing capacity, since they use multiple processors.
- This will discuss various applications and applicable method using parallel computing.



## Programming parallel Streaming Computation

- This paper discusses future directions in tools and techniques for programming parallel Streaming Computation
- Automatic parallelization of sequential programs will not achieve supercomputer performance in real applications. Instead, applications will have to be written with explicit parallelism.
- Machine-independence of parallel programs is a precondition for wide acceptance of parallel computers.



## MODTRAN on Streaming Computation and parallel computers

- MODTRAN, the moderate resolution transmittance code, used in this study is among one of the most widely used radiative transfer codes in the community.
- This software, developed by the Geophysics Division of the Air Force Phillips Laboratory, is designed to determine atmospheric transmission and radiance.
- In this paper, porting the sequential MODTRAN to various platforms is discussed; strategies of designing a parallel version of MODTRAN are developed; detailed implementation for a parallel MODTRAN is reported, and performance data of the parallel code on various computers are presented.



## Challenges of a Systematic Approach to Parallel Computing and Streaming Computation Education

- Computing resources at almost every scale are now available with cloud and distributed computing.
- Supercomputers allows complex problems, previously thought impossible, to be solved. The growth in computing performance is exceptional: with computing speed crossing the Petaflops line in 2008, Exaflops performance is expected by 2020.
- Supercomputer systems with record-breaking computing performance will be ultra-parallel (up to billions processing cores), containing different types of computing devices within a multi-level hierarchy: distributed computing systems, computing nodes with shared memory, multi-core processors, computing accelerators, SIMD and VLIW functional units.



## Conclusion

I would conclude my whole document that all of these different research papers have their different observations and conclusions. The domain supercomputing plays an important role in its performance and functionality. Supercomputers are very high powered computers having a large processing capacity, since they use multiple processors. The speed of a supercomputer is generally measured in FLOPS (Floating point Operations Per Second). Some of the faster supercomputers can perform trillions of calculations per second. Learning the study and basics of Supercomputing serves a great job in human convenience.



**THANK YOU :)**