PRESENTATION OUTLINE: — Accurately computing large floating-point numbers using parallel computing —

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1   Parallel algorithms for summing floating point numbers

- Parallelism important for scaling

- Most parallel algorithms are based on parallelising data pipelining and not on poly-logarithmic running times.

- Eatl introduced superaccumulator for efficient parallel algorithms for faithfully rounded floating point sum for exactly summing n numbers.

- This paper computes sum of n numbers in $O(\log(n))$ time using n processors

- Sum can be computed in $O(\log^2(n) \log \log \log C(X))$ time using $O(n \log C(X))$ work