

# BabelFlow: An Embedded Domain Specific Language for Parallel Analysis and Visualization

- Decouple algorithm definition from implementation
- Simple Dataflow graph represents the communication patterns
- Implicitly asynchronous
- Runtime agnostic

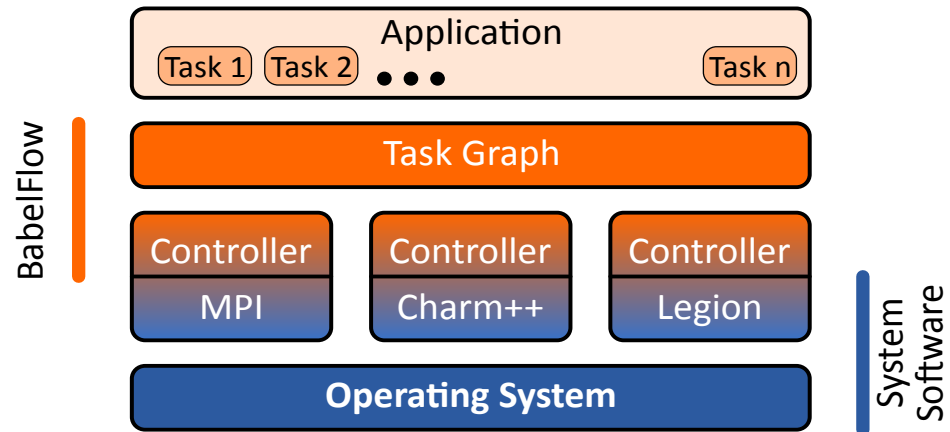
Experimenting with multiple runtimes:

- Charm++
- MPI
- Legion
- HPX

and applications:

- Visualization (volume rendering, composite)
- Topological analysis for features extraction
- 3D image registration

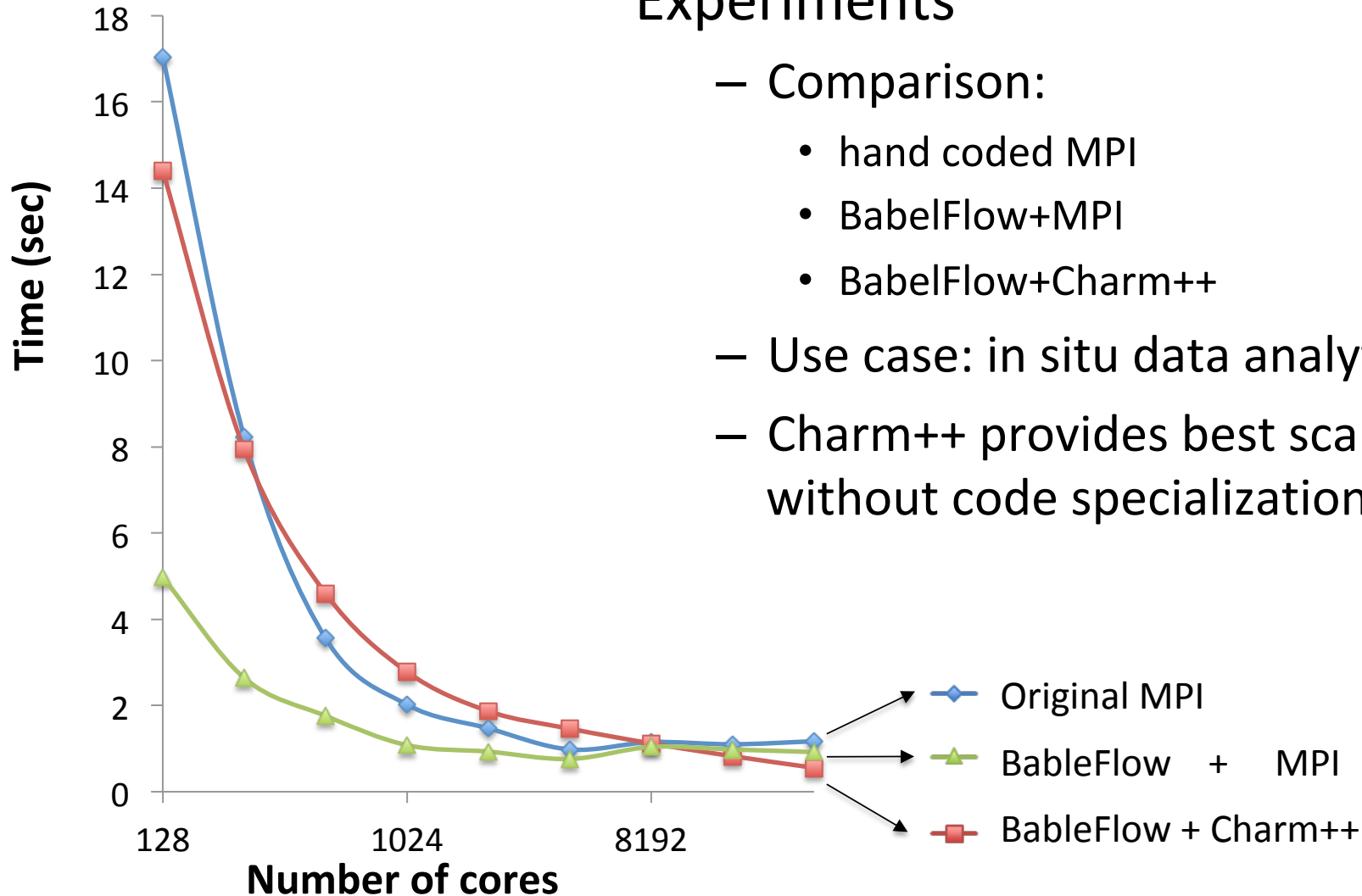
On github: <https://github.com/sci-visus/BabelFlow>



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## Experiments



### – Comparison:

- hand coded MPI
- BabelFlow+MPI
- BabelFlow+Charm++

– Use case: in situ data analytics

– Charm++ provides best scaling without code specialization