A rapid prototyping method to reduce the design time in commercial high-level synthesis tools

Jones Silva, André Werner, Florian Fricke, Michael Hübner
- Standard flow requires too much user interaction.
- Not suitable for non-experienced users.
- How to speed-up the user access to a “good” design?
Proposed solution

- Minimize non-experienced user's interaction
- Use Pre-Characterized blocks
Task-Graph creation

- LLVM Framework
- Static Analysis
- From AST to Task-Graph
Search problem

- Pre-Characterized node models (Database)
- Combinatorial problem
- Final solution depends on the design constraints
Conclusion

- The results indicate feasibility of the solution for small systems.
- Selected solutions are compatible with HLS results after some user's interaction.
- Scalability must be determined with bigger systems.