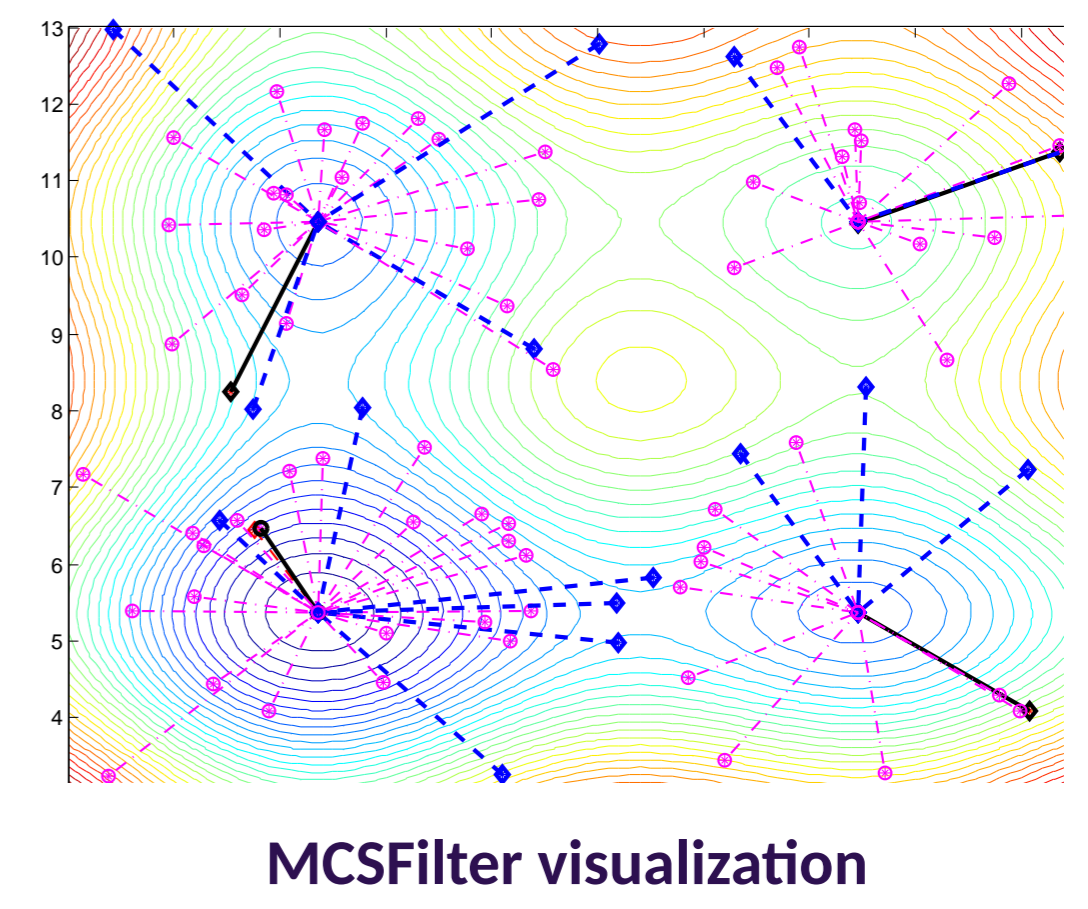
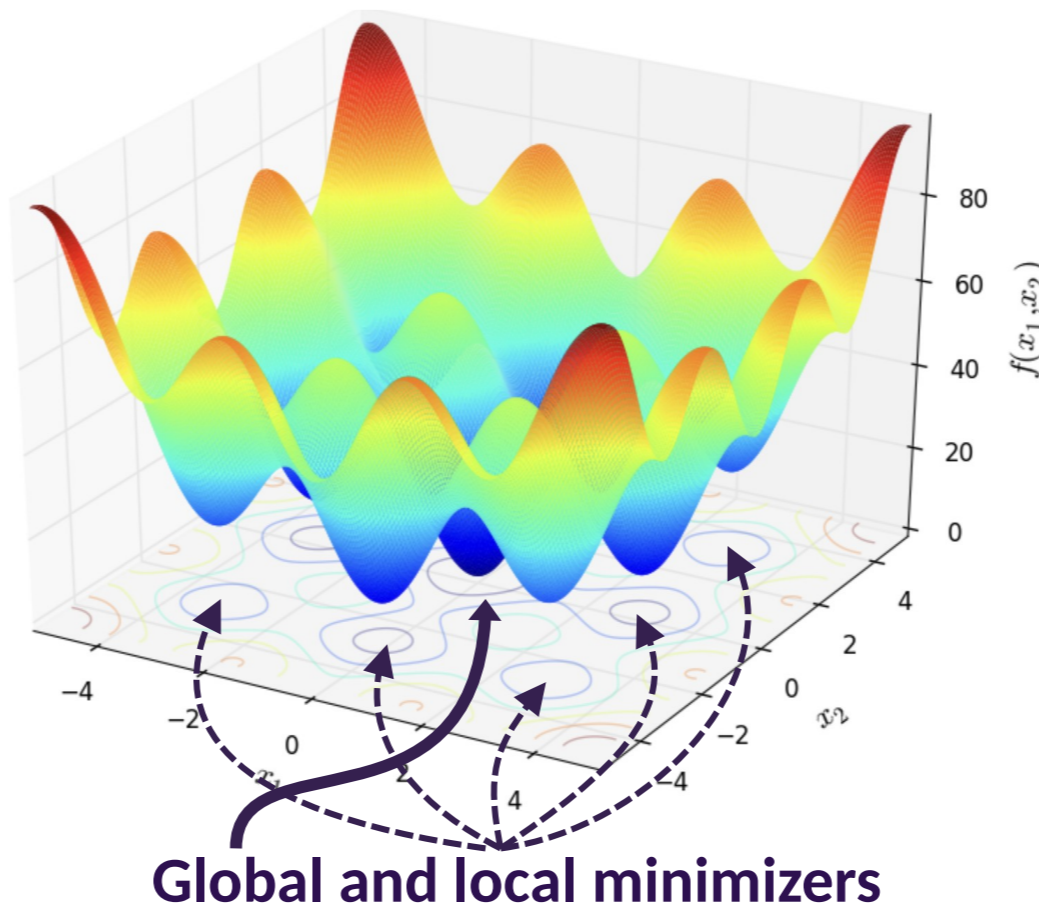


► CONTEXT

Optimization plays an important role in an industrial context, generating considerable savings [1,2].

There are several optimization algorithms available. This work focuses on the MCSFilter, a multilocal optimization method able to obtain local and global minimizers — a multistart strategy coupled with a local coordinate search filter to deal with all the constraints [3,4,5].



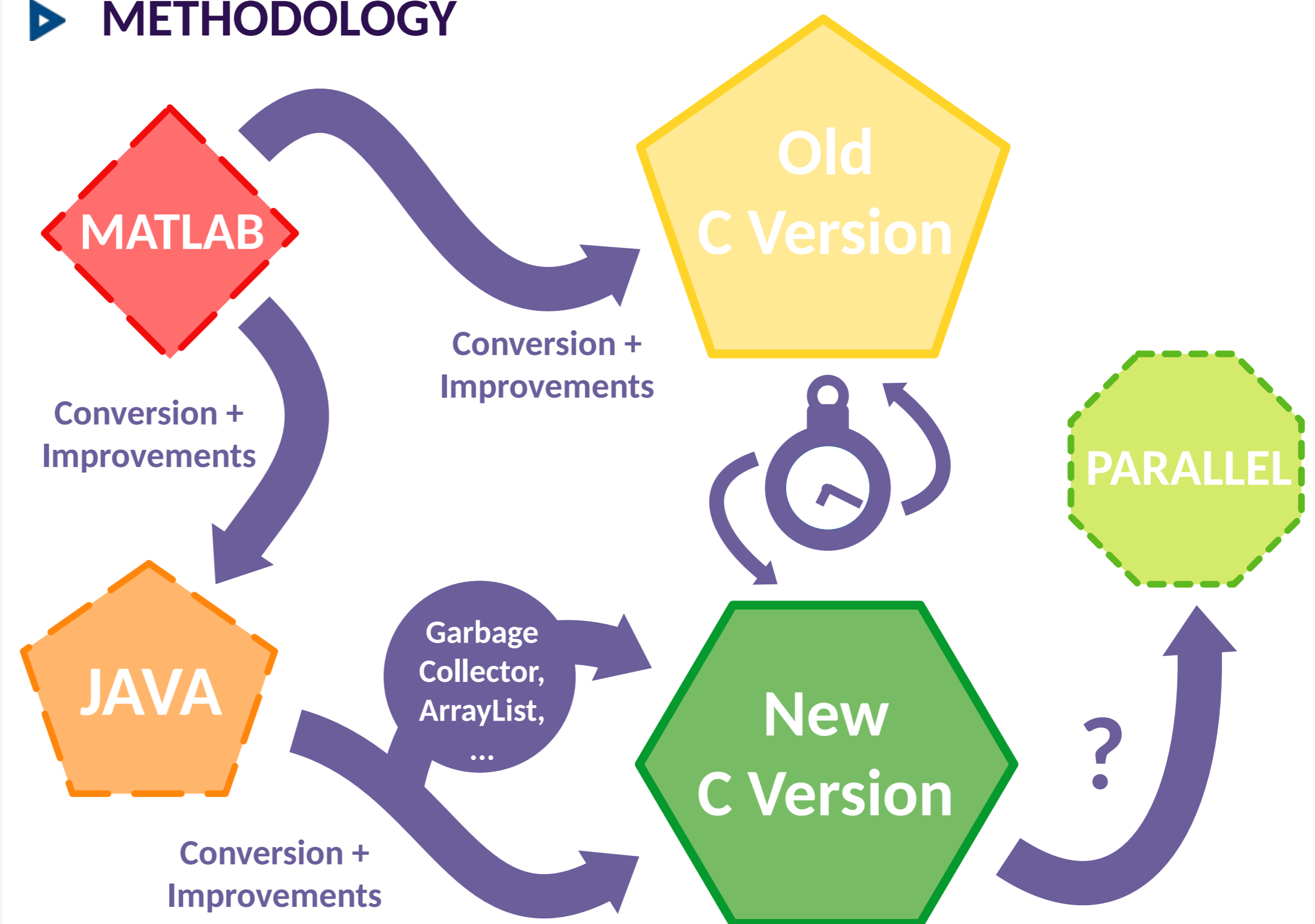
► OBJECTIVES

The general goal of this work is to achieve faster executions times than an previous C-based sequential version, which was already proven to be an improvement over the JAVA version. To achieve that goal a decision was made to use the JAVA code as reference and implement a new sequential C version.

More specifically, in this work we intended to:

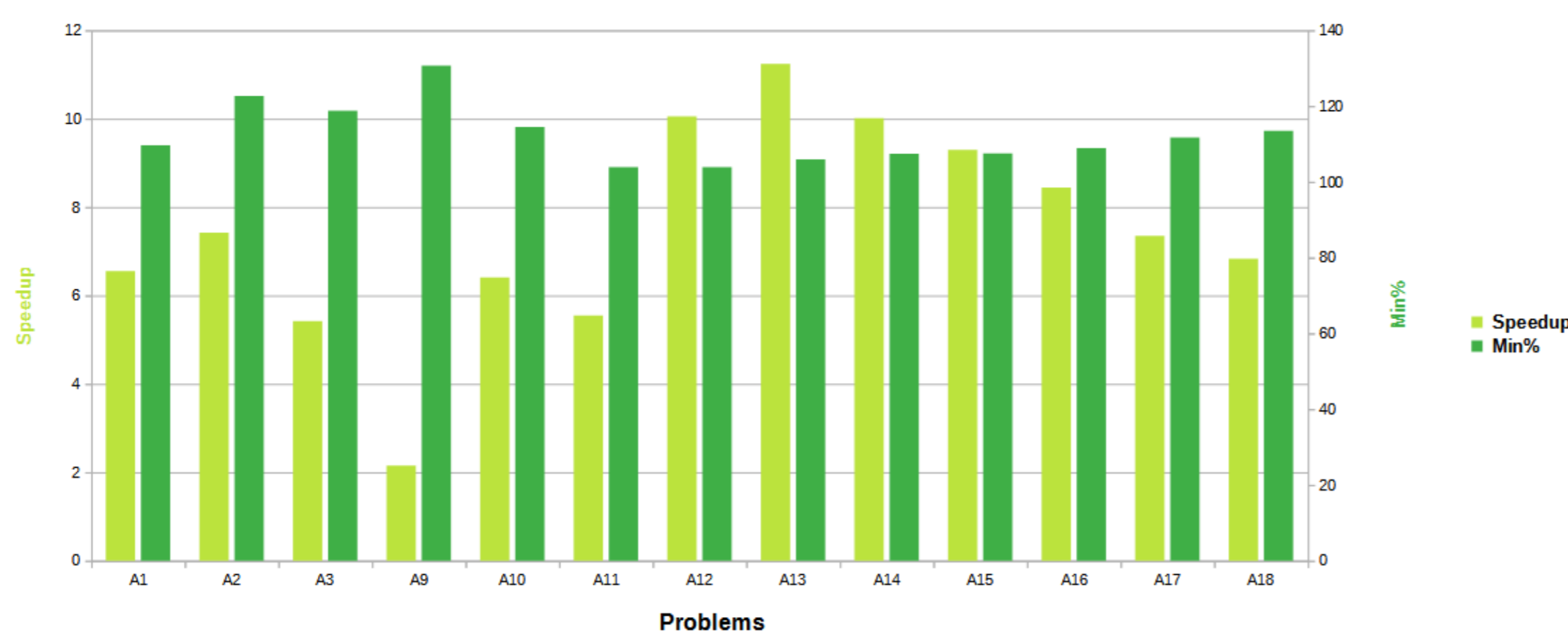
1. Improve method execution times in all of the problems used for comparison with the previous C version
2. Preserve the mathematical accuracy achieved by the JAVA implementation
3. Pave the path to follow up with a parallel implementation of this new C version

► METHODOLOGY



► RESULTS AND CONCLUSIONS

The figure below represents a comparison between the old C version and the new one. It is possible to observe that the new implementation speedup ranges from 2 to 11 times from the old one; the percentage of minimizers found goes up from 104% to 130% in the new C version.



Looking at these results the path is paved for the development of a parallel version based on this new C implementation which is expected to overcome the sequential version in problems of larger dimension.

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