

# Optimized Schwarz Methods

**Frédéric Nataf**, CNRS et Université Paris 6/ Laboratoire Jacques-Louis Lions

Optimized Schwarz methods are domain decomposition methods that offer a flexible alternative to Neumann-Neumann/FETI methods. They are very well-suited to non-symmetric or propagative phenomena (e.g. Helmholtz or Maxwell equations). In order to enforce the matching of the local solutions, interface conditions have to be written on the boundary between subdomains. These conditions are imposed iteratively. The convergence rate is very sensitive to these interface conditions. In order to have a fast convergence, it has been proposed to use very general boundary conditions that are optimized with respect to the efficiency of the method. We present theoretical and numerical results.