Domain Decomposition for multi-physics problems

Paola Gervasio
DICATAM, Università degli Studi di Brescia, Brescia, Italy
paola.gervasio@unibs.it

Christian Vergara
LABS, Dipartimento di Chimica, Materiali e Ingegneria Chimica, Politecnico di Milano, Milan, Italy
christian.vergara@polimi.it

Abstract

The aim of this mini-symposium is to collect original contributions in the field of Domain Decomposition (DD) methods arising in the field of multi-physics problems. This is the case, for example, of the Stokes-Darcy coupling modeling the filtration of incompressible fluids through porous media, of the electro-mechanical coupling in cardiac problems, of the fluid-structure interaction problems, and in general of the heterogeneous DD. In all such contexts, the use of suitable solvers is mandatory in order to obtain significant results in a reasonable computational time, as often requested by industrial or clinical applications. DD methods could be an effective way to provide fast solutions to these problems, by exploiting the different nature of the subproblems, obtaining efficient strategies to handle their coupling.

Tentative list of speakers

Simone Deparis
EPFL, Lausanne, Switzerland
simone.deparis@epfl.ch

Miguel Fernandez
Inria, Paris, France
miguel.fernandez@inria.fr

Djordje Peric
Swansea University, Swansea, UK
d.peric@swansea.ac.uk

Pablo Blanco
National Scientific Computing Laboratory (LNCC),Rio de Janeiro, Brazil
pjblanco@lncc.br

David Nordsletten
University of Michigan, USA
nordslet@umich.edu

Tommaso Vanzan
EPFL, Lausanne, Swtizerland
tommaso.vanzan@epfl.ch

Kent-Andre Mardal
University of Oslo, Norway
kent-and@math.uio.no

Marco Discacciati
Loughborough University, UK
M.Discacciati@lboro.ac.uk

Luca Gerardo Giorda
Johannes Kepler University, Linz, Austria
luca.gerardo-giorda@jku.at

Giuseppe Zampogna
EPFL, Lausanne, Swtizerland
giuseppe.zampogna@epfl.ch

Irina Rybak
University of Stuttgrad, Germany
iryna.rybak@mathematik.uni-stuttgart.de

Yanren Hou
Xi'an Jiaotong University, China
yrhou@mail.xjtu.edu.cn

Luca Dede'
MOX, Politecnico di Milano, Italy
luca.dede@polimi.it