

Non Intrusive Reduced basis Method to approximate solutions of parametric partial differential equations

THOMAS SAIGRE
Université de Strasbourg

Mathematical optimization procedures or parameter fitting may require to solve a problem modeled by partial differential equations many times for different set of parameters. The reduced basis method (RBM) has been developed to handle the issue raised by the complexity to solve such problem. However, in industrial context where solving software can be seen as « black box », the usual RBM procedure may be compromised. In this talk, we will briefly describe the RBM and limitation caused by black box software. Then we will discuss an alternative method called *Non-intrusive Reduced basis* (NIRB), relying on a multigrid method, based on a coarse grid finite element resolution.