

European Joint Doctorate Program in *High Performance Computing in Life Sciences, Engineering and Physics*

Marie Skłodowska - Curie Actions



INDIVIDUAL
PROJECTS

Optimized implementations of the Lattice Boltzmann Method in 2 & 3D on highly parallel computing devices

Exploiting memory hierarchies in future node architectures for lattice QCD applications

Massively parallel QM/MM

Algorithms for Eulerian-Lagrangian approaches in Turbulence, micro- and nano-fluidics

Scalable algorithms for solvers and noise reduction techniques for disconnected quark loops in lattice QCD

Protein-DNA interactions

HPC for Lagrangian/Eulerian Turbulence, micro- and nano-fluidic

Hybrid Monte Carlo (HMC) algorithm for stochastic hydrodynamical systems

Modelling Turbulence in LBM

Integration of DNA microarray and next generation sequencing (NGS) gene expression data

Observables probing nucleon structure and BSM physics

Hadron spectrum and Resonances

Renormalization constants and semi-leptonic transition form factors

Targeting mosquito *GPCRs* and malaria transmission

Communication efficient iterative linear solvers