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Sommario/riassunto

This open access book is the final compendium of case studies emanated from the 4-year COST Action IC1406 “High-Performance Modelling and Simulation for Big Data Applications” (cHiPSet). Funded by the European Commission from 2015, cHiPSet has created a sustainable reference network linking applied research in High Performance Computing (HPC) and Modelling & Simulation to tangibly address Big Data challenges. cHiPSet has enabled research partnerships for dozens of academics and industry practitioners located in 34 COST countries, as well as in Australia, Belarus, Brazil, China, Russia, and the USA. As a cooperation framework, cHiPSet has reached out to new audiences such as ICT professionals, commercial software developers, and the general public. At a time when Big Data has become a common household term, cHiPSet has strived to become a knowledge hub where data-driven HPC meets Modelling & Simulation. cHiPSet has also endeavoured to use and exploit results through Open Science practices, i.e., open access publication, open access to data repositories, and open-source software development. A testament to this philosophy, this compendium is set to become a required reference for the fast-changing fields of HPC, Big Data, and Modelling & Simulation.