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HIGH PERFORMANCE COMPUTING ECOSYSTEM

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Abstract. *The high performance computing (HPC) ecosystem combines the use of HPC resources, e.g., supercomputers (composed of CPUs, GPGPUs, and accelerators, parallel file systems, storage systems, and fast and low latency interconnects), parallel computing models, and sophisticated algorithms to handle scientific applications and large (massive) volumes of data in different fields of knowledge. In this talk a review is made on the HPC ecosystem and its use in scientific problems, including symbolic computation, and data processing, as well as, the need to benchmark, refactor and accelerate the software in order to remove the bottlenecks and reduce the timings of the calculations/data processing. A reference is made to the HPC Chair (a research and development infrastructure) and the HPC Centre of the University of Évora and their flagship programs and computational resources.*