

Certificate of Participation and Presentation

This is to certify that Iker Martín Álvarez, was invited and presented a research seminar at the Laboratoire d'Informatique de Grenoble (LIG), hosted by the AIRSEA team, on Thursday, April 3rd, 2025 in the IMAG building.

The seminar was titled:

"Bridging Efficiency and Flexibility: Dynamic Resource Management in HPC"

Abstract:

High-Performance Computing (HPC) systems are growing increasingly complex, with diverse workloads competing for limited computational resources. Static resource allocation often leads to inefficiencies, including resource underutilization and increased job wait times, which hinder overall system performance and scalability. As workloads become more dynamic, there is a growing need for adaptive resource management strategies that can respond to changing demands in real-time.

Dynamic Resource Management (DRM) addresses these challenges by enabling jobs to adjust their resource allocation at runtime, optimizing system throughput and efficiency. This talk provided an overview of dynamic resource allocation, exploring various reconfiguration techniques such as process management and data redistribution. Drawing from Mr. Martín Álvarez's own research and collaborations, the seminar demonstrated how dynamic resource management can enhance workload efficiency, improve system utilization, and reduce job completion time. Additionally, the presentation highlighted the importance of user interface design to facilitate the adoption of these techniques in production HPC environments.

Duration: Approximately 1 hour, including Q&A.

Signed,

A handwritten signature in black ink, appearing to be 'M. S.' followed by a long, sweeping horizontal stroke.

Prof. Dr. Martin Schreiber