




Parallel Computing Group

Universidad de Murcia

Universidad Politécnica de Valencia

<http://dis.um.es/~domingo/PCGUM.html>



Consisting of people from Universidad de Murcia (UM) and Universidad Politécnica de Valencia (UPV). They share:

- Topics Research
- Scholarship holders
- Ph.D. Students
- Computers
- Research projects

People from UM

- Murilo do Carmo Boratto, Universidad Politécnica de Valencia
- Javier Cuenca Muñoz, Departamento de Ingeniería y Tecnología de Computadores, Universidad de Murcia
- Luis Pedro García González, Servicio de Apoyo a la Investigación Tecnológica, Universidad Politécnica de Cartagena
- Domingo Giménez Cánovas, Departamento de Informática y Sistemas, Universidad de Murcia
- José Juan López Espín, Departamento de Informática, Estadística y Matemática Aplicada, Universidad Miguel Hernández de Elche
- Juan Pedro Martínez Gallar, Departamento de Informática, Estadística y Matemática Aplicada, Universidad Miguel Hernández de Elche
- Pedro Rojo Rubio, Departamento de Ingeniería y Tecnología de Computadores, Universidad de Murcia





People from UPV

- Pedro Alonso Jordá. Departamento de Sistemas Informáticos y Computación.

UPV

- Miguel O. Bernabéu Llinares. Departamento de Sistemas Informáticos y Computación. UPV

- Víctor M. Gacía Mollá. Departamento de Sistemas Informáticos y Computación.

UPV

- Francisco J. Martínez Zaldívar. Departamento de Comunicaciones.UPV

- Vicent Vidal Gimeno. Departamento de Sistemas Informáticos y Computación.

UPV

- Antonio M. Vidal Maciá. Departamento de Sistemas Informáticos y

Computación. UPV

Research lines

■ Parallel algorithmic schemes

- Iterative, divide and conquer and tree search schemes UM
- Modelization of the schemes UM
- Inclusion of self-optimization capacities UM
- Application to real problems UM/UPV
- Numerical divide and conquer algorithms, application to signal processing UM/UPV

- Collaboration with:
 - La Laguna: iterative schemes, mapping with metaheuristic techniques

Research lines

- Parallel linear algebra routines and libraries

- Improvement of a hierarchy of parallel linear algebra libraries **UM/UPV**
- Improvement of the modellization of routines **UM**
- Adaptation of routines and libraries to heterogeneous environments **UM/UPV**
- Design of parallel algorithms for structured and sparse matrices **UPV**
- Optimization of parallel linear algebra routines, adaptation to heterogeneous systems, application to scientific problems **UM/UPV**

Research lines

■ Application of parallel computing

- Graphic computing UM
- Chemistry simulations UM
- Simultaneous equation models UM
- Signal processing (FFT, Wavelets, ...) UPV
- Modelling and computing in
Nuclear Engineering UPV

- Special Collaboration with:
 - Communication Dept. UPV UM/UPV
 - Nuclear Engineering Dept. UPV UPV
- Shared projects and research

Research lines

- Heterogeneous and distributed systems

- Mapping techniques UM

- High performance distributed computing UM/UPV

- Design of heterogeneous computational kernels UM/UPV

- Special Collaboration with:
University College of Dublin UM/UPV



Network lines

- Architectures, algorithms and applications modelling. Analysis and prediction of performance
 - Modellization of routines and algorithms
 - Applications



Network lines

- Development of libraries and programming tools
 - Numerical linear algebra
 - Algorithmic schemes
 - Adequation to heterogeneous environments
 - Applications



Network lines

- Tasks mapping and scheduling
 - Processes to processors mapping
 - For heterogeneous, dynamic load or distributed systems
 - Use of the theoretical models to decide the mapping



Network lines

- Libraries tuning and applications
 - Installation techniques for routines and libraries
 - Adaptation techniques at running time