

Department: Mathematics and Computing

Group name: *Scientific Computation Group*

Acronym: *GRUCACI*

Group Coordinator: San Juan Díaz, Juan Félix

ANEP Area(s): Physics and space sciences; Computer sciences and computer technology

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Department Report: 17/04/2015

RESEARCH TEAM

Number of researchers: 4

<u>Researcher</u>	<u>Department</u>	<u>Professional category</u>
San Juan Díaz, Juan Félix	Mathematics and Computing	TP
López Gómez, Rosario	Mathematics and Computing	Associate
Pérez Barrón, Iván Luis	Electrical Engineering	Doctor on Contract
Vergara González, Eliseo Pablo	Mechanical Engineering	TP

COLLABORATORS

Nº of collaborators: 0

<u>Collaborators</u>	<u>Department</u>	<u>Professional category</u>
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Lines of research

Scientific computation applied to different fields:

1. Space flight dynamics: Methods of orbit propagation. Space Situational Awareness. Propagation of uncertainties. Differential algebra.

2. Health Sciences: Genomic sequencing.

Remote scientific computation through the Internet.

Application of statistical methods and computational intelligence (machine learning) to scientific computation.

Scientific and technological offer

High Performance Computing (HPC).

Efficient algorithm programming for maximum speed of execution.

Modelling of physical phenomena.

Analysis, modelling and prediction of time series.

Statistical analysis of data.

Design, implementation and management of web platforms for remote computing (Web-Tools model).

HPC computing in Astrodynamics through the AstrodyWebTools platform.

Computational intelligence (machine learning).

HPC Computing in Genomic Sequencing through the Bioinformatics Web Tools platform.

National and international relations

University of Murcia, Faculty of Computer Science, Spain (Sebastián Ferrer).

SUNY, State University of New York at Buffalo, New York, USA (Paul J. Cefola).

Thales Group, France (Pierre Mercier).

Secure World Foundation, Washington DC, USA (Brian Weeden).

ESA (ESOC), European Space Agency, Germany (José Manuel Sánchez).

CNES, Centre National d' Études Spatiales, France (Denis Hautesserres).

Politecnico di Milano, Italy (Camilla Colombo, Pierluigi Di Lizia).

Deimos Space, Spain (Noelia Sánchez).

ESA (ESTEC), European Space Agency, The Netherlands (Guillermo Ortega, Dario Izzo).

University of Southampton, UK (Alexander Wittig).

OHB System AG, Germany (Juan C. Bastante).

GMV, Spain (Alberto Águeda, Srinivas J. Setty).

University of Surrey, Surrey Space Centre, UK (Roberto Armellin).