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Computational Modelling Group

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EU Open source software project receives green light

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An open source software project involving the University of Southampton to extend the capacity of computational mathematics and interactive computing environments has received over seven million euros in EU funding.

The resulting code, together with associated data and research publications, will be made available for free on the Internet as open source software that other researchers can use.

The project will develop software for mathematical tools (such as GAP and SageMath) which can be used by researchers to run computer models and crunch vast quantities of data, using computers to manipulate and solve equations. The software underpins many research projects, ranging from physics and gravity simulation, to engineering materials research and pure mathematics.

The funds will also support the development of virtual computing environment tools (such as the [IPython Notebook](#)) that create interactive documents able to solve equations using computer code, and process and visualise the resulting data.

This work flow revolutionises the ability to reproduce a computational experiment and document research data exploration. It also allows sharing of the computation and results in the 'notebook' with collaborators and is expected to penetrate all aspects of computational science over time.

OpenDreamKit is a 7.6 million euro project funded by the European Union's Framework 2020 programme. The four year project brings together 15 academic and industry partners from France, Germany, Norway, Poland, Switzerland and the United Kingdom. The universities of Oxford, Sheffield, Southampton St Andrews and Warwick will share in 2.2 million euros to fund their contribution to the project.

[Professor Hans Fangohr](#), principle investigator at Southampton, says: "The project's aims and approaches link closely to ongoing work at Southampton in our [Computational Modelling Group](#) community and the [Southampton EPSRC Centre for Doctoral Training in Next Generation Computational Modelling](#). Southampton has pioneered the use of IPython in teaching computation for over a decade.

"This engagement with the leading edge development of these tools is a great opportunity to contribute to tools that are of great value to many researchers and students in academia and industry. We are excited to be part of this open source approach to research software engineering."

Neil Lawrence, Professor of Machine Learning at the University of Sheffield, added: "There is no point in doing great science and mathematics unless you communicate it and this project is all about that. Not just talking about or writing about it, but recreating it and sharing ideas in a way that allows fellow researchers to interact with them."

Project's homepage: <http://opendreamkit.org>