**LFRic: Meeting the challenges of scalability and performance portability in Weather and Climate models**

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* A new dynamical core and supporting software infrastructure in preparation for weather and climate modelling at exascale.
* Mixed finite element formulation on an unstructured mesh facilitates scalability.
* Use of a Domain Specific Language to achieve separation of concerns between domain science and computational science allowing automatic code parallelism.
* Modular design facilitating use of community libraries and frameworks.
* Utilises good software engineering principles and object-orientated functionality of Fortran 2003.