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The OASIS3 coupler: a European climate modelling community software

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Abstract. This paper presents the OASIS3 coupling software used in five of the seven European Earth System Models (ESMs) participating to the Fifth Coupled Model Intercomparison Project (CMIP5). A short history of the coupler development is followed by a technical description of OASIS3. The performances of a few relatively high resolution models coupled with OASIS3 are then described. It is shown that, although its limited field-per-field parallelism will eventually become a bottleneck in the simulation, OASIS3 can still be considered an appropriate tool for most of these relatively demanding coupled configurations. Its successful use in different CMIP5 ESMs is then detailed. A discussion of the benefits and drawbacks of the OASIS3's approach and a presentation of planned developments conclude the paper.

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