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DR KUNKEL AND PROGRAMME COMMITTEE

DR JULIAN KUNKEL • UNIVERSITY OF READING • DEPT OF COMPUTER SCIENCE

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Dear Dr Kunkel and programme committee,

I am writing for consideration of my application to the Summer School on Effective HPC for Climate and Weather.

I am a PDRA working on the ParaCon project, a multi-university collaboration with the UK Met Office with the aim of developing the convective parameterisation of the future. My current role entails considerable HPC use to perform cloud-resolving to global scale numerical simulations and to perform model development with the Met Office UM and MONC models, mainly on Monsoon2/NEXCS. Previous work has involved work with multiple models and machines in the US.

Particularly in my work with the development of the MONC model, I have run into knowledge limitations that, improved, would better facilitate efficient performance analysis, help overcome existing difficulties with I/O, and allow me to innovate new solutions. My past experience in these areas has allowed me to progress with some success, but I know that additional understanding would permit me to diagnose and repair problems with greater certainty and speed. This is mainly what I hope to gain from attending this summer school. Of course, it is always wise to simply stay abreast of the latest developments in all regards. Additionally, I have found in my time as a PDRA that I particularly enjoy sharing my knowledge with students. Collectively, the knowledge gained from this course would immediately be put to use in model development and propagated to the students that I teach and the colleagues that have come to depend on my work for their own research.

In terms of a project, I would be interested in identifying and repairing some real-life performance issues. For instance, I am aware of more and less efficient versions of MONC, both in terms of computation and I/O. I would be interested to see if the methods from this course could lead to different, faster, or better solutions to the problems we have found – or even if they happen to discover and repair new issues.

Sincerely,

Todd R. Jones