

Outline Proposal to Broaden the Remit and appeal of the Group

While the Fortran language continues to serve the computational science and engineering community very well, in projects both old and new, we must recognise that it exists in a world of alternative choices. Indeed, serious computational work is increasingly achieved through a variety of languages and at high levels of abstraction (e.g. Python, Matlab, Julia & R) even if there might be a Fortran library under-the-hood somewhere. Native Fortran still has its advantages - not least that it is an ISO standard language with well understood, stable and portable features, the most recent of which includes explicit parallelism.

One of the Fortran SG's main aims is to promote the language but how can this be done effectively if the target audience cannot be engaged? Either they will have never been exposed to Fortran and thus not see the relevance of the Fortran SG, or worse be encumbered with tired clichés about "dusty decks" and Hollerith codes. The membership demographics also suggest that fewer younger people are joining, and if they write programs using one of the many alternative languages on offer, why should they seek out the Fortran SG?

This proposal seeks to address this issue by broadening the remit of the SG to include all aspects of programming for science and engineering, irrespective of language choice. The group would then become the home for those interested in mathematical modelling, the implementation and optimization of numerical algorithms and for those practising in the computational end of what is often called research computing - programming in such languages as outlined above.

While many related programming topics might not be unique to this particular field and may overlap with some other specialist groups - there are aspects which differentiate it, for example an understanding of IEEE 754 or the handling of ill-conditioned matrices - i.e. numerical analysis. There are definitely challenges and considerations which have no equivalent in other programming fields.

The SG would continue to support Fortran as now - including the important standardization work, being the focal point for the UK position on proposed developments and funding representation at the relevant ISO/IEC committees. The hopefully increased membership might then gain experience of Fortran, once they meet and engage with programmers well practised in it. Of course, it still might not be for them and other languages will be catered for. It is possible that the experience that some of the committee membership has in steering language standards might be transferable to other computational programming communities.

We will also continue to develop the SG's relationship with the IOP's Computational Physics Group, running joint events and providing access to each other's events where possible etc. We might co-opt people from their committee or even their membership at large to help with talks, events and other activities.

Considerations

- Will broadening the appeal dilute or distract from the Fortran activities?
- Will the Fortran SG survive in future if fewer people are taking up Fortran?
- Proposed new name for the SG?
e.g. Computational Science & Engineering SG (incorporating Fortran)

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