

Referee Report 2YE

CD Laboratory Particulate Flow Modeling

Laboratory Head Stefan Pirker

→ Excerpts of the following section may be passed on to the laboratory head:

Quality of the Research Programme

Is the performed research innovative and is its quality on a high scientific level?

The performed research is highly innovative and of a very high scientific level. The CD laboratory is working in the field of computational modelling of particulate flows using sophisticated hybrid models. In addition, where possible, experimental validation is undertaken with sophisticated non-invasive monitoring methods. The balance between the computational and experimental work is in very good shape.

Is there – in addition to the application-oriented activities – sufficient progress in basic research?

The strong point of the research programme is given by the fact that the basic research is inspired by a large body of industrial applications. I praise the very good balance between application-oriented research activities and basic research.

Working Programme

Is the CD-Laboratory working according to its schedule? If not, are the reasons given justified?

The CD-Laboratory is fully working according to its schedule. It is in fact amazing to observe that under the scientific and inspiring leadership of Prof. Stefan Pirker the laboratory has become very much visible in this highly competitive area within only a few years. This is really an outstanding achievement.

Dissemination of Results



Is the number of publications/poster presentations/proceedings in accordance with the respective scientific field and the run time of the laboratory?

The scientific output is good but can be further developed. Especially the publication of the research results in peer-review journals can be increased. Obviously, this is related to the run time of the laboratory on one hand and the development time for (validated) computational models on the other hand.

Are the results published in journals of high reputation?

Prior to the site visit a limited number of key publications were provided by the CD laboratory. These papers were all published in recognized journals and were all of a very high quality. In view of the quality of the conducted research I expect that a lot of very good journal papers will additionally be generated by this laboratory in the coming years.

Collaborations

How do you rate the non-academic collaborations and especially the knowledge-transfer?

The non-academic collaborations are very strong. The laboratory has organised the knowledge transfer to the industrial partners in a proper and convincing way. During the site-visit it became very clear to me that the CD laboratory and its scientific director are highly recognized and respected by the industrial partners.

Are the existing academic collaborations productive or should they be enhanced or expanded?

Currently there exist many productive academic collaborations which is to be expected during this phase of development of the laboratory. It is suggested to limit the academic collaborations somewhat and establish strategic alliances with a few strong academic groups within Europe. This potentially can provide the basis for future successful applications in the context of EU funding schemes.

Tutoring

Are the diploma students or PhD students engaged in the laboratory well supported in their work? Are they encouraged to participate in conferences and workshops and are they encouraged to publish in journals of high quality?

The junior researchers are very much encouraged to take own initiatives and are very well guided by the scientific director. Moreover, they are also encouraged to present and publish their work during conferences and workshops. Clearly Prof. Pirker has built a strong team of ambitious junior researchers working on a very high level on problems that really matter to society (industry).



Future Funding

Are the aims for the future funding period well explained?

The aims for the future funding period are ambitious (but realistic) and clearly explained by the scientific director of the laboratory.

Improvements

Which changes and/or improvements should be considered?

I encourage the scientific leadership to promote the publication of the results of the research in peer-review journals such as Powder Technology, Particuology, Chemical Engineering Science, AIChE Journal, International Journal of Multiphase Flow and Journal of Computational Physics.