

Evaluation of lab work (course project, max. 55 p)

2.1 Aim (5 p)

- Define the main aim of the experiment, e.g. what do you aim to show? The main mechanism you aim to show needs to directly relate to the topic of your project.
- *Characteristics of the highest score:* well-defined aim, what you aim to show, which mechanism you study. The aim needs to relate clearly to the project topic. The aim shows targeting an advanced experiment considering the career stage (e.g. aiming at quantitative assessment of a non-linear or other phenomenon).

2.2 Methods (10 p)

- Describe the methods of your experiments in a way that the experiments could be repeated by an independent operator. Describe your analysis. Any codes used need to be added to an appendix.
- *Characteristics of the highest score:* well-chosen methods to address the aim. One excellently conducted advanced experiment or two very well conducted experiments. Independent problem solving in designing the experiment. Methods relate to the topic. Designed to facilitate quantitative analyses in SI units (not arbitrary units). Describes the applied calculations and as an appendix includes programming code + raw or curated data (must contain everything to run it independently).

2.3 Results (20 p)

- Report results as e.g. image series, graphs, bar charts, maps etc. of one main mechanism of study. Results need to be reported in SI units, not arbitrary units or non-SI units.
- *Characteristics of the highest score:* tidy data presented in a scientifically sound way. One excellently made analysis per experiment or two very well conducted analysis. Results are correct and in SI units. Use scale bars with images and videos. Analysis clearly the independent contribution of the student.

2.4 Discussion & conclusion (20 p)

- Discuss the results in respect to the physics you have studied on the topic. Regardless on what your main mechanism of study, you should discuss and consider the possibility of the radiation force, acoustic streaming, cavitation, atomization, shear forces, heating, i.e. why or why not the other phenomena were or should have been / should not have been present.
- *Characteristics of highest score:* Discussion of the results. Discussion showing an understanding of connecting different phenomena in the field of ultrasonics according to instructions. A clear scientifically sound conclusion drawn from results and discussion.