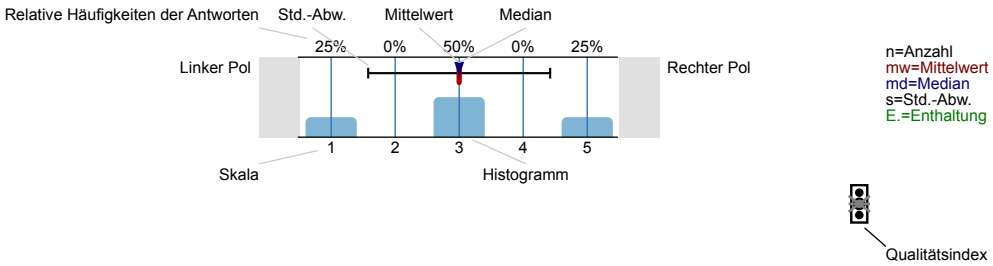
Prof. Dr. Roderich Tumulka

Foundations of Statistical Mechanics Fachbereich Mathematik WiSe 20/21(MAT-30-10-2-WS2021)
Erfasste Fragebögen = 8
Anzahl der versendeten TANs (Online) = 13
Rücklaufquote (Online) = 61.5

Auswertungsteil der geschlossenen Fragen

Legende

Fragetext



Erklärung der Ampelsymbole

Der Mittelwert liegt unterhalb der Qualitätsrichtlinie.

Der Mittelwert liegt im Toleranzbereich der Qualitätsrichtlinie.

Der Mittelwert liegt innerhalb der Qualitätsrichtlinie.

1. Remark

To improve teaching, the mathematics department carries out an evaluation of courses. You may therefore be asked to fill out this questionnaire in several courses. Your details remain anonymous. Thank you for your cooperation!

2. Degree Programme

2.1) Subject

n=7

Mathematics	57.1%
Mathematical Physics	42.9%

2.3) Degree

n=6

B.Ed.	16.7%
B.Sc.	33.3%
M.Ed.	0%
M.Sc.	50%

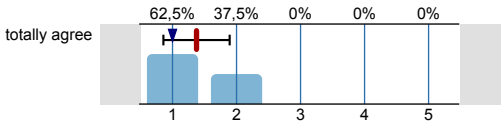
2.5) Semester

n=8

1-2	12.5%
3-4	25%
5-6	37.5%
7-8	12.5%
9-10	0%
>10	12.5%

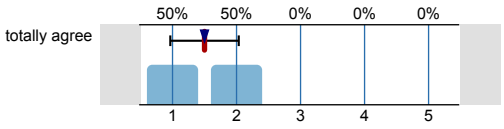
3. Course

3.1) The learning objectives are clearly defined.



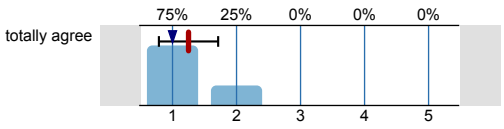
n=8
mw=1,4
md=1
s=0,5

3.2) The requirements are transparent.



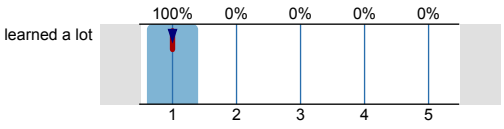
n=8
mw=1,5
md=1,5
s=0,5

3.3) The seminar topics were sensibly coordinated.



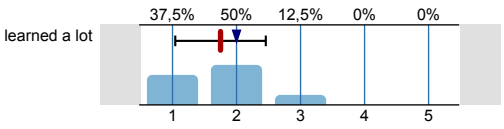
n=8
mw=1,3
md=1
s=0,5

3.4) From my own seminar work I have ...



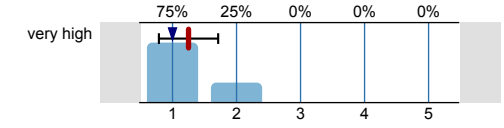
n=8
mw=1
md=1
s=0

3.5) From the seminar talks of the other participants I have ...



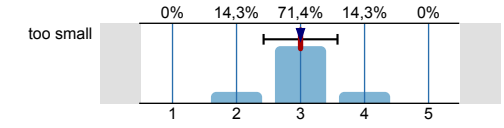
n=8
mw=1,8
md=2
s=0,7

3.6) My personal learning progress through the event is ...



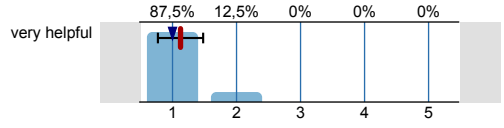
n=8
mw=1,3
md=1
s=0,5

3.7) The required scope of my own seminar work was ...



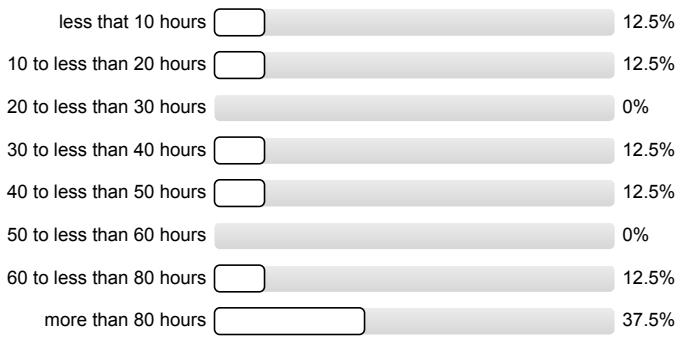
n=7
mw=3
md=3
s=0,6

3.8) Comments and questions from the lecturer during the lecture were ...



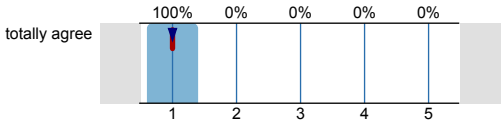
n=8
mw=1,1
md=1
s=0,4

3.9) How big was the effort for the preparation of your own seminar work (possibly lecture, elaboration, exercises, etc.) - WITHOUT participating in the seminar sessions?



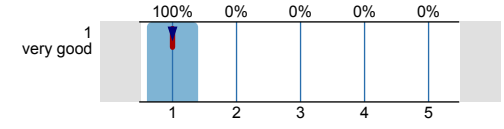
n=8

3.10) Attending the course was worth it for me.



n=8
mw=1
md=1
s=0

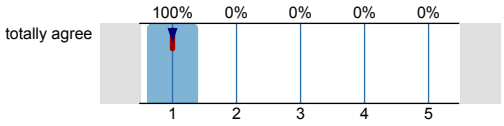
3.11) Up to now I give the course the overall grade



n=8
mw=1
md=1
s=0

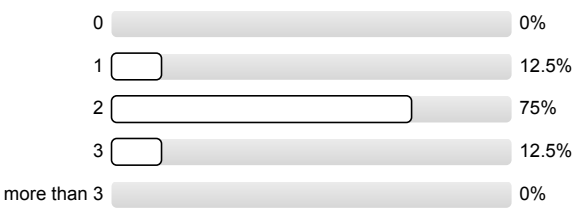
4. Support

4.1) The supervisor was easy to reach.



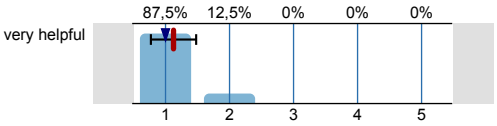
n=8
mw=1
md=1
s=0

4.2) Number of meetings with the supervisor



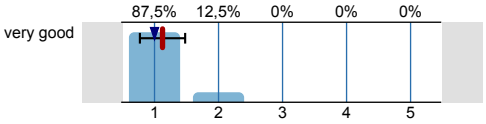
n=8

4.3) The meetings with the supervisor were ...



n=8
mw=1,1
md=1
s=0,4

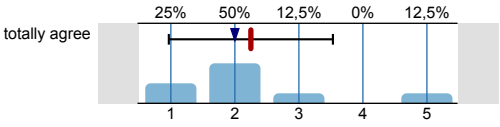
4.4) I rate the support overall as ...



n=8
mw=1,1
md=1
s=0,4

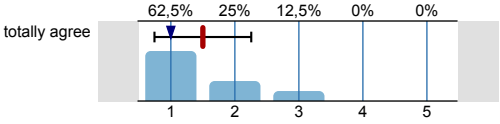
5. Digital teaching

5.1) Online teaching was able to adequately replace face-to-face teaching.



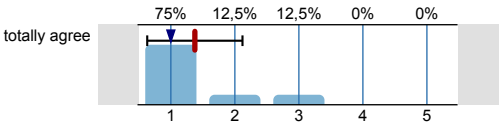
n=8
mw=2,3
md=2
s=1,3

5.3) I quickly found my way around the online learning environment.



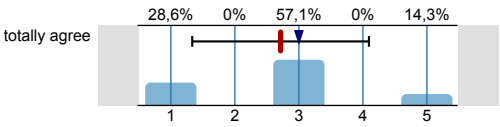
n=8
mw=1,5
md=1
s=0,8

5.4) I can learn successfully with the materials offered in the online learning environment.



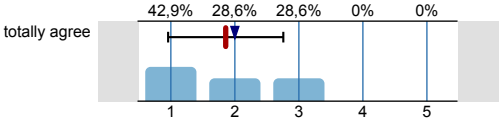
n=8
mw=1,4
md=1
s=0,7

5.6) I would like to have more contact with my supervisor in the context of online teaching.



n=7
mw=2,7
md=3
s=1,4

5.7) During the online teaching I missed personal contact with other students.



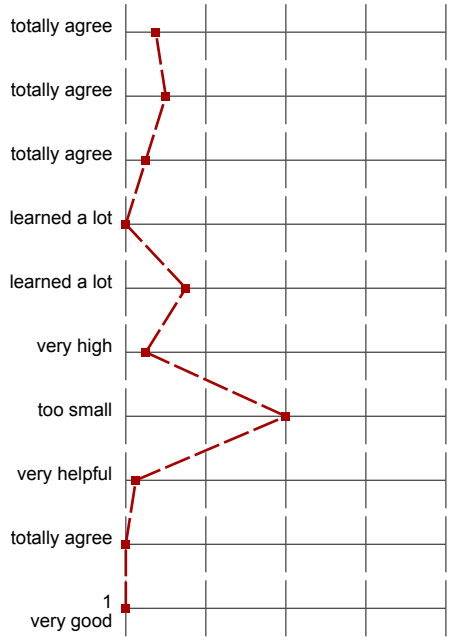
n=7
mw=1,9
md=2
s=0,9

Profillinie

Teilbereich: Fachbereich Mathematik
Name der/des Lehrenden: Prof. Dr. Roderich Tumulka
Titel der Lehrveranstaltung: (Name der Umfrage) Foundations of Statistical Mechanics

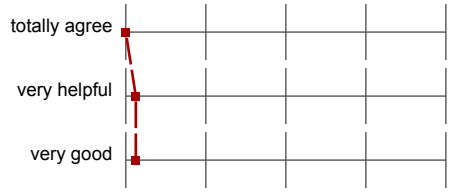
Verwendete Werte in der Profillinie: Mittelwert

3. Course



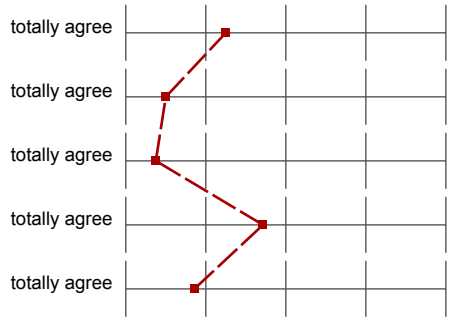
3.1)	The learning objectives are clearly defined.	totally agree	strongly disagree	n=8	mw=1,4	md=1,0	s=0,5
3.2)	The requirements are transparent.	totally agree	strongly disagree	n=8	mw=1,5	md=1,5	s=0,5
3.3)	The seminar topics were sensibly coordinated.	totally agree	strongly disagree	n=8	mw=1,3	md=1,0	s=0,5
3.4)	From my own seminar work I have ...	learned a lot	learned little	n=8	mw=1,0	md=1,0	s=0,0
3.5)	From the seminar talks of the other participants I have ...	learned a lot	learned little	n=8	mw=1,8	md=2,0	s=0,7
3.6)	My personal learning progress through the event is ...	very high	very low	n=8	mw=1,3	md=1,0	s=0,5
3.7)	The required scope of my own seminar work was ...	too small	to high	n=7	mw=3,0	md=3,0	s=0,6
3.8)	Comments and questions from the lecturer during the lecture were ...	very helpful	not helful	n=8	mw=1,1	md=1,0	s=0,4
3.10)	Attending the course was worth it for me.	totally agree	strongly disagree	n=8	mw=1,0	md=1,0	s=0,0
3.11)	Up to now I give the course the overall grade	1 very good	5 very poor	n=8	mw=1,0	md=1,0	s=0,0

4. Support



4.1)	The supervisor was easy to reach.	totally agree	strongly disagree	n=8	mw=1,0	md=1,0	s=0,0
4.3)	The meetings with the supervisor were ...	very helpful	not helpful	n=8	mw=1,1	md=1,0	s=0,4
4.4)	I rate the support overall as ...	very good	very poor	n=8	mw=1,1	md=1,0	s=0,4

5. Digital teaching



5.1)	Online teaching was able to adequately replace face-to-face teaching.	totally agree	strongly disagree	n=8	mw=2,3	md=2,0	s=1,3
5.3)	I quickly found my way around the online learning environment.	totally agree	stronly disagree	n=8	mw=1,5	md=1,0	s=0,8
5.4)	I can learn successfully with the materials offered in the online learning environment.	totally agree	strongly disagree	n=8	mw=1,4	md=1,0	s=0,7
5.6)	I would like to have more contact with my supervisor in the context of online teaching.	totally agree	strongly disagree	n=7	mw=2,7	md=3,0	s=1,4
5.7)	During the online teaching I missed personal contact with other students.	totally agree	strongly disagree	n=7	mw=1,9	md=2,0	s=0,9

Auswertungsteil der offenen Fragen

2. Degree Programme

2.2) Others:

- Physics (2 Nennungen)

2.4) Others:

- PhD
- PhD Mathematics

3. Course

3.12) What do I like about this course?

- All the topics were very interesting.
  Good Balance between presentation and discussion.
- I feel like I have made tremendous progress in better understanding statistical mechanics. Professor Tumulka's "need to get to the bottom of this" attitude is wonderful and very inspiring. His ability to critically think and dissect otherwise conceptually difficult problems, out loud, has been very useful of a demonstration of how a physicists should think. I have therefore learnt so much, not only physics, but of being a scientist.

  I had never before heard of a Quantum Mechanical notion of Boltzmann entropy (there is!). There is not even a mention of this in the wikipedia page of entropy (in February 2021). I had never sat down to think of what "typically" really means in statistical mechanics. I was not aware that there were multiple notions of entropy, that are in fact conceptually different. I had pondered, but never grasped so clearly the emergence of macroscopic irreversibility from microscopic reversible laws.

  Spoilers ahead:
  I learnt so many bizarre things as well. To name a few: Fallible but nonetheless very probable Brains fluctuating into existence. The arrow of time possibly emerging from the square root of the angular momentum of a universe.. And maybe not so bizzare, but more like comedic, that as far as we can mathematically prove, Boltzmann equation is only guaranteed to be valid for a time less than what it takes for 1/5th of the particles of the gas collide..
- I was slightly "forced" to finally learn about several metrics in GR, which I always wanted to do but never found the time for. And I really learned a lot about it ;)
- The course was a lot of fun to participate in. The subjects of the course were really interesting and even days after the seminar I caught myself thinking about some of the talks and the ideas that were presented. The atmosphere of the course was relaxed and allowed for a discussion of difficult topics I was never afraid to ask any questions. I also loved preparing my own talk, diving head-on into papers about a topic I have only heard about but never really seen felt really good and I loved to give my talk about it, even though I am usually afraid of giving talks. 10/10 would do again!
- Very dedicated and enthusiastic lecturer

3.13) What do I dislike about this course?

- Of course, some parts were quite philosophical and not as exact as a pure mathematics seminar. But this always happens in foundations of Physics and it si worth having the experience of engaging in a slightly philosophical talk.
- some of the later talks which used concepts from general relativity where hard to understand for me

3.14) Space for additions and comments on the event:

- I was very happy with the seminar, I think all the participants had good presentations.
  It was a lot of work but in the end it was worthwhile.
- This seminar was very unorthodox. This is precisely the kind of courses you want to take at a university, rather than ones with typical textbook material. Even if you do not care about foundations for the sake of foundations, I imagine this seminar to be very useful for people who are interested in and serious about understanding kinetic theory and fluid mechanics (for reasons like Astrophysics or condensed matter), but also in gravity where the subtle details of what entropy means and "state counting" become very important.
- Why was the talk about the gibbs paradox at the very end? It seems to me that it would have fit better at an earlier point (wasn't a problem though, just wanted to mention it)

4. Support

4.5) Space for additions and comments on supervision:

- As the supervisor is also my PhD supervisor, we had several talks, were my presentation was one topic, but not the only one.
- Excellent. It was very fun discussing.
- Professor was very helpful in the preparation process with both the structure and questions regarding the content and was accomodating if there were difficulties.
- The supervision was perfect. Professor Tumulka really took his time and was always open to questions, even on the days before the presentation. His explanations helped a lot and after every meeting we had I understood much more than before.
- Whenever I asked for help, I got an absolutely satisfying answer

5. Digital teaching

5.2) Why couldn't it replace it adequately?

- Blackboard is still best for explaining.
- Face-to-face discussions are a lot more convenient and easier than discussions online. Sometimes if the internet connection is bad, answers and comments are delayed, because of that several people talk at the same time etc. or comments are not clearly understandable,...and of course the personal contact was missing.
- Online teaching can never replace physical teaching adequately.

5.5) Have you encountered any errors or problems (such as broken links) in the online learning environment? Please describe them:

- Had problems with my internet connection sometimes
- Nope.

5.8) How could networking with other students be improved through the design of the course?

- In retrospect, a forum or similar for the course would have been very nice. Maybe after every talk, students could make a thread where they post their slides, allowing further discussion to ensue.
- No clue
- One might engage into a discussion right after the talk.

  But actually, this is what some of us did voluntarily. It might be a good idea to also force other students to engage into a discussion right after the talk by asking each of them separately to put forward questions or comments concerning the talk. (This trick was, for instance, used within a Machine Learning seminar)