The COVID-19 pandemic has finally proven that many meetings that we used to fly to were not necessary as in-person meetings. We have successfully moved much of our meetings online. Certainly, we will be glad to go back to work in our offices and to also meet in person again. However, for the environment it is good to know that a high share of long- and short-distance distance flights can be replaced with virtual meetings.

Virtual meetings have a variety of advantages: they reduce emissions from travel, reduce costs and time demand. This enables a broader participation and diversity of attendants.

Much advice that goes for meetings, presentations, chairing, facilitating discussions etc. in person applies equally to the virtual world: know your audience, be authentic, prepare, be concise, emphasize important points, and develop a logical structure!

But since virtual work is not the same as a face-to-face work environment, there are some additional things to be aware of. This is the focus of this document. We share with you a short and crisp checklist that should help you not freak out about doing things online, and to be prepared for the small and big differences of online presenting, moderating and conferencing.

1. Watch the time! Short and crisp sessions!
   Sessions should take no longer than 45 minutes in groups of more than five people. Plan frequent breaks, more than you would for offline meetings. Paying attention in front of a screen is much more exhausting than in a class or meeting room. When talking/presenting it is easy to lose track of time, and feel that there is still capacity to keep going. Chances are there isn’t, so do honor the breaks.

2. Take some time just to hang out…
   Make use of the breaks not only to give people time away from the screen, but also for informal conversation. This risks being sidelined when there are no breaks for interacting informally. Plan for breakout groups (no matter the size of the full group). Virtual Apéros, Borrels, Feierabendbiere, whatever they are called where you are right now, including pub quiz-like games have also become popular ways to socialize. We know, it’s not the same, but opportunities need to be created! Remember, also at in-person meetings not everybody will engage in small talk either.

3. Embrace the chat
   The chat is an extra opportunity to get feedback from otherwise less outspoken participants. It can also be a preferred platform for exchange among participants and a great place where everybody can contribute. Explain and encourage the chat use in your meeting regularly and keep track to actually follow-up. It can also be used as a tool for forming opinions among the participants and to provide ad-hoc resources for backing up or providing alternatives. Explain in the beginning of the meeting how the chat shall be used, whether it is to create a speaker’s list, as a tool to send additional information/links, as a way to show approval/dissent…

4. Have assistance for chat, technical issues and background info.
   The bigger the meeting, the more people should be on your team for technical support, screen sharing, recording, managing the chat, facilitating breakout-groups, providing info, etc. It makes things smoother, allows the
presenter to focus on his/her core task, and gives you a
professional touch (if managed well). Agree before on a
clear division of roles and on the main agenda items to
ensure a smooth progression.

5. **Adapt your facilitation of discussions**
   - Ask participants to enter their full name. Reference and
call on participants by name. This keeps people attentive
and recreates some of the intimacy that gets lost
through the absence of direct eye contact.
   - It is good practice to have **microphones muted** when
not speaking. The moderator should keep an eye on
this. It can also be helpful when an assistant monitors
the microphones.
   - If the bandwidth is feeble, it is good practice to switch
off the **video transmission** to favor the audio channel. It
is however equally appreciated if the respective speaker
switches on her/his video.
   - There are plenty of tools out there to facilitate discus-
sions and collaborative work, e.g. Mural, Miro, Google
Jamboard, Padlet. Think hard, whether you do indeed
need those, and if so make sure you are able to handle
them well. Keep it smart and simple!
   - **Be familiar with the technicalities**: it is essential for a
good outcome. Therefore, favour popular over fancy
tools so that the majority of participants feels comforta-
ble to engage. Think of offering a training session or lit-
tle games to explore functionalities: Who is first to raise
his/her hand? Who can draw a star on the whiteboard?
Present a slide in 30 secs!
   - Make sure you handle **discussions** well; going around
the table is not as easy when everybody shows up dif-
ferently on screens. Make clear in the beginning of the
meeting how people can join the discussion and how
they are included in the speakers’ list, e.g. “raising hand”
or typing an “*” in the chat. Address people individual-
ly when giving the floor and best announce who will be
next in line so that the participant is ready when it’s his/
her turn.
   - Ask for explicit **feedback** regularly – and allow the time
to respond: when you do not see reactions you better
ask if comments, instructions, questions are fully under-
stood. Train yourself to give short and precise statem-
ents, comments, instructions.

---

1. **Audio quality is key**
   - A good audio quality is crucial for an effective meeting.
   background noise especially can be very disturbing.
   Eliminate own noise sources and pay attention to noi-
   se from other participants. A high quality **headset with**
   **built-in microphone** is good for the individual; a stand
   alone **speakerphone** is a valuable investment for en-
   gagement of groups in the same room.
   - Make sure that the **internet connection** is sufficient,
i.e. that audio, video and mouse pointer go through with-
out interruption. LAN connections typically offers more
bandwidth than WLAN.
   - The **carbon footprint of streaming** is not such a big
problem as it is often reported. But there are differen-
ces in the energy intensity of internet access networks:
while mobile networks consume most energy, followed
by WLAN, LAN connections have the lowest energy de-
mand, especially when connected to optical fiber1.

2. **The visual quality: Look into the camera, there is the audience**
   - Arrange your set-up to be **well positioned in front of the**
camera. This is particularly important for moderators
and presenters. Ideally hands are also visible on the
screen so that you can use them as much as possib-
le for body language. Avoid cameras that point at you
from below, otherwise the audience would perceive you
looking down at them.
   - To address the audience directly, **look straight into the**
camera. It is similar to gazing into the audience regu-
larly when presenting. So try to make that a habit.
   - The best lighting for video meetings is a **moderate, pos-
sibly indirect light from the front or frontal side**. Make
sure that the light isn’t uncomfortably bright for you or
makes you appear too bright on the screen. Avoid back-
light as it will make your face disappear in your own
shadow, and people will feel like they are speaking to
somebody who rather remains anonymous. So sitting
with the camera pointed towards a sunlit window or to-
wards a lamp is not a good idea.
   - Make sure that your **background is not distracting**.
A clean, possibly monochrome background is a
good choice; you may also place a logo or gra-
graphic message as your background, so long as it
is not distracting. Virtual backgrounds can help
protect privacy but are costly on the bandwidth.
Conferences have traditionally been events where people come together around content presentations. The live presentation, the learning and the networking are central elements of conferences. These elements cannot easily be replicated by an online format; but online conferences offer their own possibilities: they save time, money and resources, and can be more inclusive and accessible to a wider range of participants. Many of the tips above related to online meetings are also valid for online conferences. But there are some specific options to be considered for online conferences, with their own pros and cons:

- **Giving presentations live and online.** This is the simplest way of offering the content in a live format. Typically attendants listen in and have the option to pose questions, either in person or through a chat in writing. The disadvantage is that this format does not create a feeling of a community, and that lacks the colloquial, informal elements important for learning and networking: it is hard to chat with a colleague when it feels like all others can overhear.

- **All presentations are pre-recorded and can be accessed on demand.** The advantage here is that access to contents is even more flexible. However, the community feeling is even further reduced. This can be remedied by means of live sessions, where authors give a pitch talk on their full presentation, are available to answer questions or even participate in a moderated discussion panel.

- **Distributed hub conferencing** is a mixed approach: in stead of gathering all in a single place and instead of everybody being alone in front of a computer screen, certain meeting places can be created that are virtually connected with each other. This would allow for a smaller group to have in-person meetings, while being technically connected to similar groups gathered around at some other place. Some global conferences have thus created regional hubs in different time zones, saving intercontinental travel. This model can easily be scaled to any other size, be it national or regional.

- **Another opportunity are virtual meeting rooms** where the author is present to answer questions and discuss with participants for a certain amount of time. These meeting rooms can have a limited number of participants to offer the advantages of conversations in smaller groups. This would also allow participants to exchange among each other, having sound and camera switched on.

A similar set-up can be arranged for poster presentations, where participants “move around” in a virtual space and can gather around posters (or other content items) to interact with the presenter and possibly other “by-standing” participants.

---

3. **Design/adapt your slides for the occasion**
   - Slides online are not necessarily slides offline. A bit more text and explanatory components might actually be helpful in a virtual setting.
   - **Font** does not need to be as big as if you were in a big auditorium.
   - Change your mouse to a larger pointer that is clearly visible on screen (most programs provide this option). This helps showing elements on your screen; you can also write or draw live.

4. **Do you need a meeting at all? Use also other ways to communicate virtually**
   - Ask yourself whether you really need a live virtual meeting for your purpose. Not everything has to be discussed in a meeting. Fatigue of virtual meetings might be avoided. Remote work also offers opportunities to work asynchronously, e.g. in written form. This has the advantage that people can think about proposals thoroughly and at a convenient time.
   - For example, flip your classroom, provide certain inputs via recordings, reading materials, videos, individual or group research, and convene only for discussion.
   - Use other forms of virtual collaboration to jointly work on reports, papers, presentations, etc. E.g. Google Docs and all the much fancier tools that are available online.
Polling tools are great for engaging and pre-structuring discussion: questions from the presenter (or chair) offer ways to gather feedback and steer the future discussion. Vice versa, questions can be handed in from the audience and then ranked by participants, e.g. by likes/dislikes. Thus interventions would be prioritized by common interest instead of ‘first come, first serve.’ This would require an active monitoring and moderation of the poll/chat.

The scarcity of informal interaction and thus lacking opportunities for exchange and networking are significant drawbacks of virtual conferences. Mindful organizers will therefore work hard to create opportunities for fostering exchange: think of creating games in virtual reality; ask for competitions and offer prizes; explore creating virtual spaces where people can actually move around and engage between poster sessions, a café with standing tables, some private booths, etc.

An increasing number of platforms have adapted to the need for virtual conferences and it is worth while checking what apps such as ZOOM, Jiitsi, GoToMeeting, and Teams etc. offer in terms of specific features that enable a professional set-up.

Some final remarks:

- There are aspects where virtual meetings will inevitably offer less than in-person meetings. In particular, the non-verbal communication, the directness and the feel of reality will be affected. Therefore, think carefully whether you need to emulate this as close as possible, or whether more distance can also be turned into an advantage, e.g. offering more space for reflection, less dominance by individual characters, ...
- There is a learning curve also to meeting, teaching, moderating and presenting online. Give yourself and your colleagues, students, participants a break if things are not great right away!
- In this guide, we do not talk about privacy concerns of virtual meetings or open source technology, which are important aspects to consider when choosing tools, not only, but particularly, when recording meetings.

Some relevant resources that also inspired the authors in their design of online meetings and teaching:

See here a collection of links to reflections and guides for virtual conferences and meetings: https://stay-grounded.org/organisations/change-travel-policy/#virtualmeetings


Claire Doole’s training courses on presenting and moderating in virtual meetings: www.doolecommunications.com


Virtual meeting of more than 16,000 geoscientists at the vEGU2021: some recommendations and reflections on a possible format. https://egu21.eu/about/vegu21_format.html

Fourwaves: Professional Conferencing Services, e.g. Virtual Poster Session with option for up to 8 participants to join the author for a live, interactive discussion. https://fourwaves.com/en/virtual/

Gather.town: a virtual space created to present content and to meet with others. https://gather.town/
END NOTES & LITERATURE


³ See for instance Fourwaves with e.g. Virtual Poster Session with option for up to 8 participants to join the author for a live, interactive discussion. https://fourwaves.com/en/virtual/

⁴ See for instance Gather.town: a virtual space created to present content and to meet with others. https://gather.town/