

Critiques of science day 2

The uses of science

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Theories of Science

Spring 2024

Plan for the last two hours

- Intro and discussion: From your complaints to a critique of science?
- Lecture:
 - Science funding in the 2020s
 - Some popular uses of science in the 2020s
 - follow the money
 - case study: FMEs (Berker)
 - a critique: the innovation imperative (Pfothenhauer & Jasanoff)
- Conference preparations

Beyond individual grievances

Why your grievances matter (in the context of this course)

PhD education is where academia reproduces itself, we learn about the state of academia from how it treats its future self

Your grievances

according to my reading - you may disagree
(the ledger is now public:

<https://learn.kultwiki.net/thomas/TOS/src/branch/main/ledger.md>)

- A sometimes surprisingly old-fashioned, hierarchic organisation
- Uncertainty: Knowing what/when is enough
- A bad deal: 3 years is just not enough - working overtime for free is built into the system
- PhDs complain too much!

Complaining academics

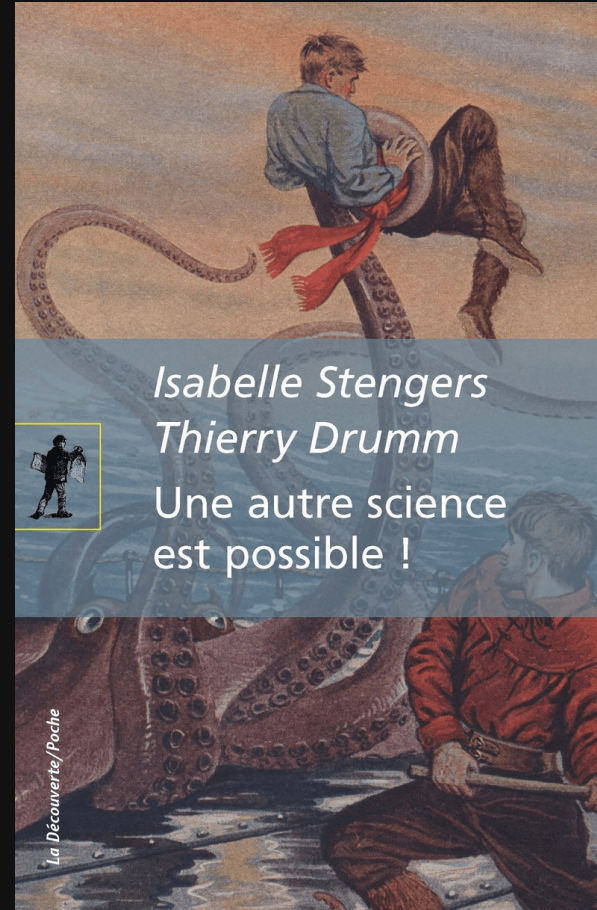
PhDs are not necessarily complaining more than professors, public suffering seems to be part of a common academic "habitus" (=habits, skills, dispositions of character, etc), but why?

Some non-exclusive explanations

- A very articulate group which is good at making its own concerns visible
- Being "overworked" protects from additional work (especially from academic housekeeping)
- It signals that one is "in demand" (cf. "attention and reputation economy")
- Those who are overworked are at least not working too little (cf. impostor syndrome)
- Three years is indeed little time for conducting a whole research project (in the case of PhD projects: for the first time!)

And: The heroic academic

- The conqueror of nature, revealing its secrets, controlling and taming its powers, going beyond the research frontier into unknown lands (where riches wait?)
- The ascetic seeker of truth who sacrifices his/her body for glimpses of a higher truth
- But what if nothing reveals itself, nothing submits, and when



**Do you have proposals for
an alternative academic
habitus (maybe with less
heroism and less
complaining)?**

Uncertainty 1

a certain autonomy

- (Relatively) high degrees of autonomy for the individual employee
- For me the one big reason to be and stay in academia
- But: Privileges senior and tenured staff, more problematic for new and temporary employees, especially difficult for PhD students with the desire to make themselves useful
- And: The professors' autonomy tends to create unresolvable person conflicts and dysfunctional organizational units

Uncertainty 2: Contradictory and unclear messages

- Old (authoritarian, collegial) **vs** new (bureaucratic, professional) academia **vs** "norsk arbeidsliv" (welfare state, corporatism) - especially difficult for us foreigners to decode
- PhDs: cheap workforce **and** "our future" **and** "our heirs" **and** ...
- Confused signals from the leadership: excellent teaching, research, outreach, innovation, project acquisition - keeping everyone busy - impostors abound!

Navigate and try to
enjoy your
autonomy!



Potential next steps

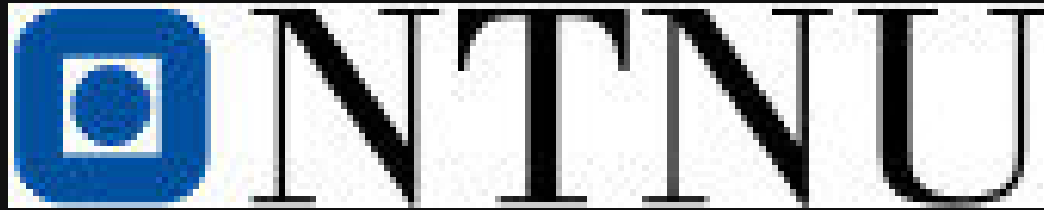
- Complete the ledger of grievances with the grievances of administrative staff, of engineering PhD students, of tenured staff that discovers that a tenured position does not improve work-life balance, MA students that worry about the worth of their education, ...
- Identify relations, overlaps, conflicts of interest
- Search for local solutions
- Where possible: Together! Where necessary: Against each other!

Lecture:

Some uses of science in the 2020s that are more popular than others

Following the money, a case study and a critique

1. Follow the money



in numbers

- Budget: 10.5 billion NOK (Norway's defence budget: 90.8 billion NOK)
- 8054 full-time equivalents (FTEs). Two of three (5259) work with teaching, research and dissemination (academic positions)
- Facilities (owned or rented) totalling 734 000 m² (ca 100 football pitches)
- The funding is distributed internally based on a base + production of students

<https://www.ntnu.edu/facts>

Follow the money: The government (75%)

- Funds administration, teaching, operation and research
 - ca. 50% of a regular professor's time is for research
 - strategic funding distributed according to the university's priorities: Civil security, Ocean and Coast, Community, Energy, Health and Life Science

Other sources for "funding your research"

The screenshot shows the NTNU website's 'Funding your research' page for employees. The page features a navigation bar with the NTNU logo and links for 'News', 'My profile', 'For employees', and 'For students'. A search and menu icon are also present. The breadcrumb trail indicates the user is in the 'Funding' section. A language selector for 'Norwegian Bokmål' is visible. The main heading is 'Funding your research' with a sub-heading 'For employees'. Three main content areas are provided: 'Horizon Europe' with a description and links for 'News and events' and 'EU advisors at NTNU'; 'The Research Council of Norway' with a link to 'Apply for funding at the Research Council of Norway'; and 'Apply for fellowships and scholarships' which lists various funding sources and includes a link to 'Apply for funds and scholarships'. A list of other applicable sources includes NTNU fellowships, Fulbright grants, Norway-America Association, The Research Council of Norway's scholarship database, Erasmus programme, and AXA Research Fund.

NTNU News My profile For employees For students Search Menu

For employees / Research / Funding

Norwegian Bokmål

Funding your research

For employees

Horizon Europe

Horizon Europe is the EU Framework Programme for Research and Innovation.

[News and events](#)

[EU advisors at NTNU](#). Please consult early.

[Information and support](#) for those who want to apply for financing from the EU's Horizon Europe programme.

The Research Council of Norway

[Apply for funding at the Research Council of Norway](#)

Apply for fellowships and scholarships

NTNU has over 30 foundations, funds and scholarships that you may apply for monetary support from:

- [Apply for funds and scholarships](#)

Others that you can apply to:

- [NTNU fellowships and awards](#) (in Norwegian)
- [Fulbright grant](#) (in Norwegian)
- [Norway-America Association](#)
- [The Research Council of Norway's scholarship database](#)
- [The Norway-America Association](#)
- [Erasmus programme](#)
- [AXA Research Fund](#) (AXA Chair and AXA Fellowship)

<https://i.ntnu.no/forskningsmidler>

Follow the money: external funding (25%)

- RCN & EU & various smaller sources
- Research grants usually awarded to consortia involving other R&D institutions, businesses, local governments, non-profits, etc., which have their own agendas
- "Free" funding (fripro) for individual researchers has been reduced and restricted recently

Horizon Europe

- Tackles climate change
- Helps to achieve the UN's Sustainable Development Goals
 - Boosts the EU's competitiveness and growth
- Facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges
- Supports the creation and better diffusion of excellent knowledge and technologies
- Creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.

Long term plan for research and higher education

Overarching goals (2023-2032)

- Strengthened competitiveness and innovative capacity
- Sustainability
- High quality and accessibility

Focus areas:

Ocean and coast, Health, Climate-environment-energy,
Industrial technologies, Societal safety and readiness,
Trust and community

[https://www.regjeringen.no/no/tema/forskning/innsiktsartikler/langtidsplanen-for-forskning-og-hoyere-utdanning-](https://www.regjeringen.no/no/tema/forskning/innsiktsartikler/langtidsplanen-for-forskning-og-hoyere-utdanning-2023-2032/id2929453/)

[2023-2032/id2929453/](https://www.regjeringen.no/no/tema/forskning/innsiktsartikler/langtidsplanen-for-forskning-og-hoyere-utdanning-2023-2032/id2929453/)

The humanities

HF, NTNU, Strategy 2018-25

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Innovative humanities

STRATEGIC DEVELOPMENT GOALS

The Faculty of Humanities will:

Include social and cultural entrepreneurship and innovation in our programmes of study and our research where it is relevant

Strengthen our cooperation with the business community, the cultural sector and public-sector organizations

Humanistic innovation contributes to positive changes and provides benefits to the economy, society, culture, public services, well-being, environment and quality of life outside the academic world.

The education, research and artistic activities at our Faculty give us a solid basis for meeting societal challenges. Interdisciplinarity is a prerequisite for success. Our knowledge about humanity, its values and its ways of thinking forms the foundation for our approach to innovation.

Summary: Follow the money

- What science should be used for:
 - Competitiveness and innovation
 - Norway: Ocean and coast, health, safety, sustainability
- Of course these are plans and not the reality

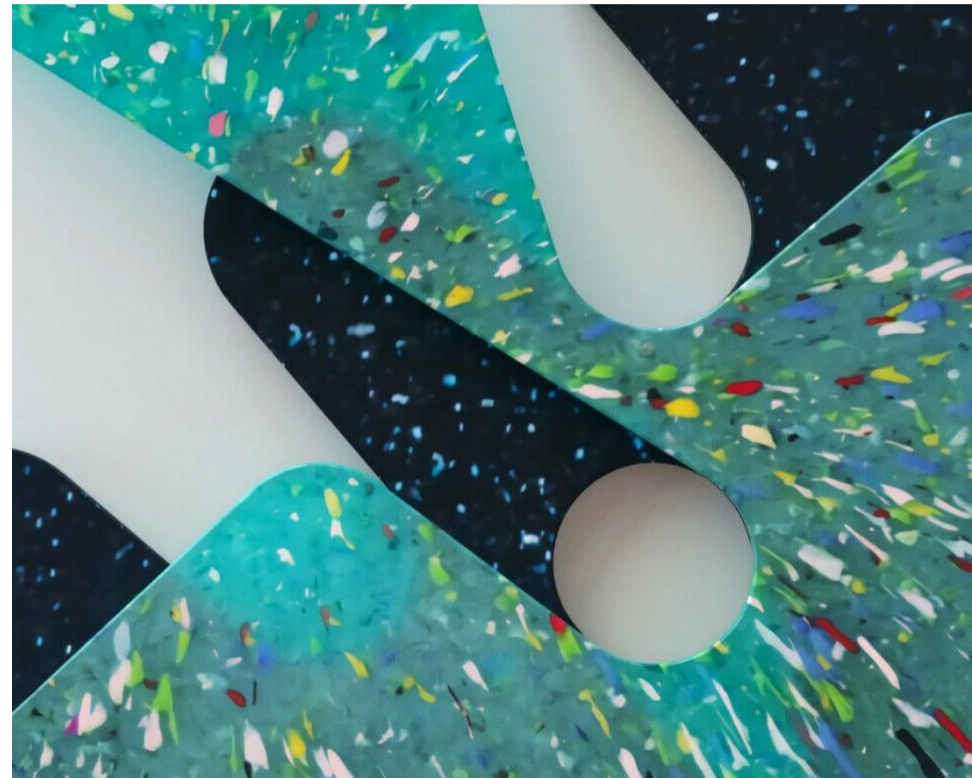
**A popular use of
science:
Sustainability and
innovation**

A case study and a critique

Case study
Two Research Centres for
environmentally friendly
energy

Centres for Environment-friendly Energy Research

The Centres for Environment-friendly Energy Research (FME) carry out long-term research targeted towards renewable energy, energy efficiency, CCS and social science aspects of energy research. The centres selected for funding must demonstrate the potential for innovation and value creation. Research activities are carried out in close collaboration between research groups, trade and industry, and the public administration, and key tasks include international cooperation and researcher training. The centres are established for a period of maximum eight years (5 + 3).





- ABOUT ZEB
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- LABORATORIES
- CONTACT

ZEB Book

The ZEB Book shows what can be achieved when researchers and practitioners work together to develop the building performance level of tomorrow, but needed...

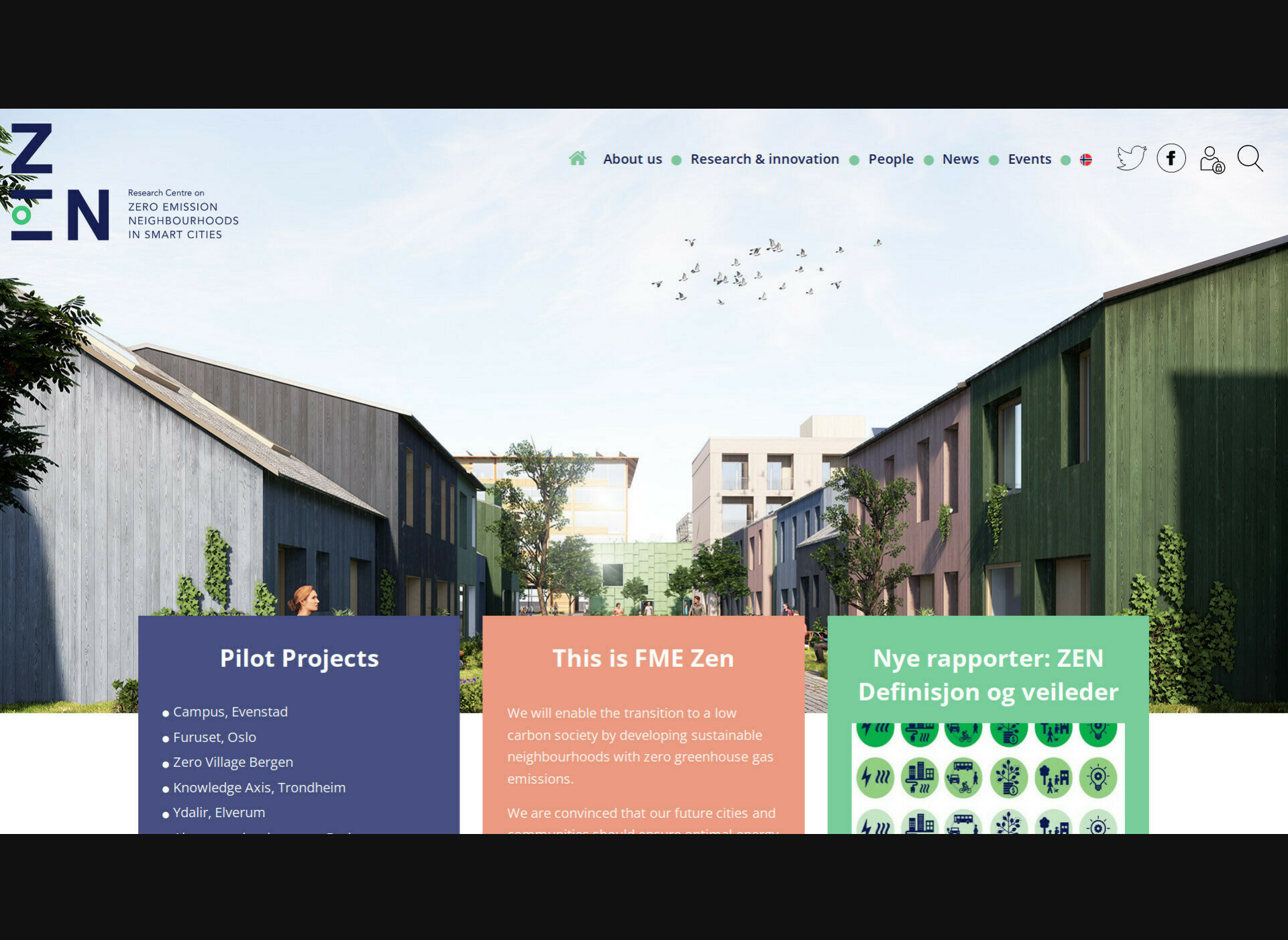
[Read More](#)

Research Centre on Zero Emission Neighbourhoods in Smart Cities (ZEN)

The ZEN Research Centre is the successor of ZEB and conducts research on sustainable neighbourhoods with zero greenhouse gas emissions. Find more information on...

[Read More](#)





Pilot Projects

- Campus, Evenstad
- Furuset, Oslo
- Zero Village Bergen
- Knowledge Axis, Trondheim
- Ydalir, Elverum

This is FME Zen

We will enable the transition to a low carbon society by developing sustainable neighbourhoods with zero greenhouse gas emissions.

We are convinced that our future cities and communities should ensure optimal energy

Nye rapporter: ZEN Definisjon og veileder

ZEB and ZEN

- decarbonising the built environment: from buildings (ZEB) to groups of buildings (ZEN)
- 2009-2024
- together approx. 700 mio kr
- funding shared between RCN and "partners" representing "all" stakeholders (businesses from the whole value chain, regulatory bodies, public institutions)
- Main outcomes: definitions, academic research and "pilots"

Clear trends between 2009 and 2024

- More short-term, applied research initiated by partners (= trans-disciplinary research)
- Increasing importance of market research and the creation of business models
- Introduction of innovation as evaluation criterion, an innovation group, an innovation manager
- Professionalised science communication

**Taking a step back:
A critique of the
Innovation deficit model
(Pfotenhauer & Jasanoff)**

Innovation as panacea

- From science as search for truth to provider of solutions to problems
- From scientific progress to effective problem solving
- Three case studies: Luxembourg, Singapore, Denmark (and Norway)

Problems in need of solving

- Luxembourg: Aging population and public health, missing research mass
- Singapore: shifting but centered around security needs, technological growth to compensate for size
- Denmark: science as unexploited economic resource
- (Norway: aging population and public health, high cost of welfare state, divesting from the oil "sleeping pillow")

Science as solution

- Luxembourg: Bio-innovation hub, gateway to Europe
- Singapore: Import of perceived 'best practice', e.g., MIT
- Denmark: New university governance
- (Norway: Maritime technology hub, gateway to arctics)

Critique

"The invisible politics of the innovation imperative"
(Pfothenhauer & Jasanoff)

Effective way to prevent discussion and hide diverging interests ("what should we live of after the oil?" "think of the elderly!")

CUDOS

Communism

Universalism

Disinterestedness

Organised Skepticism

(Merton, 1940s)

PLACE

Proprietary

Local problem

controlled by external

Authority

Commissioned

Experts as problem solvers

Tensions

(Berker 2023)

Is CUDOS still
describing a set of
appropriate values
for the 2020s (has it
ever)?

Conference preparations

<https://conf.kultwiki.net/24>

1. Register and submit your abstract before **2024-05-06 00:00** (please also indicate there if you will present in person, online or deliver a recording)

Everyone gets 15 minutes of fame

2. Prepare a 15 minutes introduction to the topic together (or another format?) - before the conference day

Team T&P

Team T&C

Team S&C

Team S

Formalities

- This is an arena for experimentation and learning, formal requirements are therefore minimal: the participation requirement and word counts to incentivise your engagement with the course
- In general terms, conference papers are basically shorter pieces often produced and published quicker than journal articles (but depends on the conference)
- Self-plagiarism: a bad thing when publishing but your conference paper will **not** be published
- But: Recycling of ECTS: **not** allowed!
- Which still opens for
 - publishing based on the conference paper outside the thesis
 - to treat the paper as **very bad first** draft for a chapter/article in the thesis

**See you in a month for an
intensive day of
experimenting and
learning!**