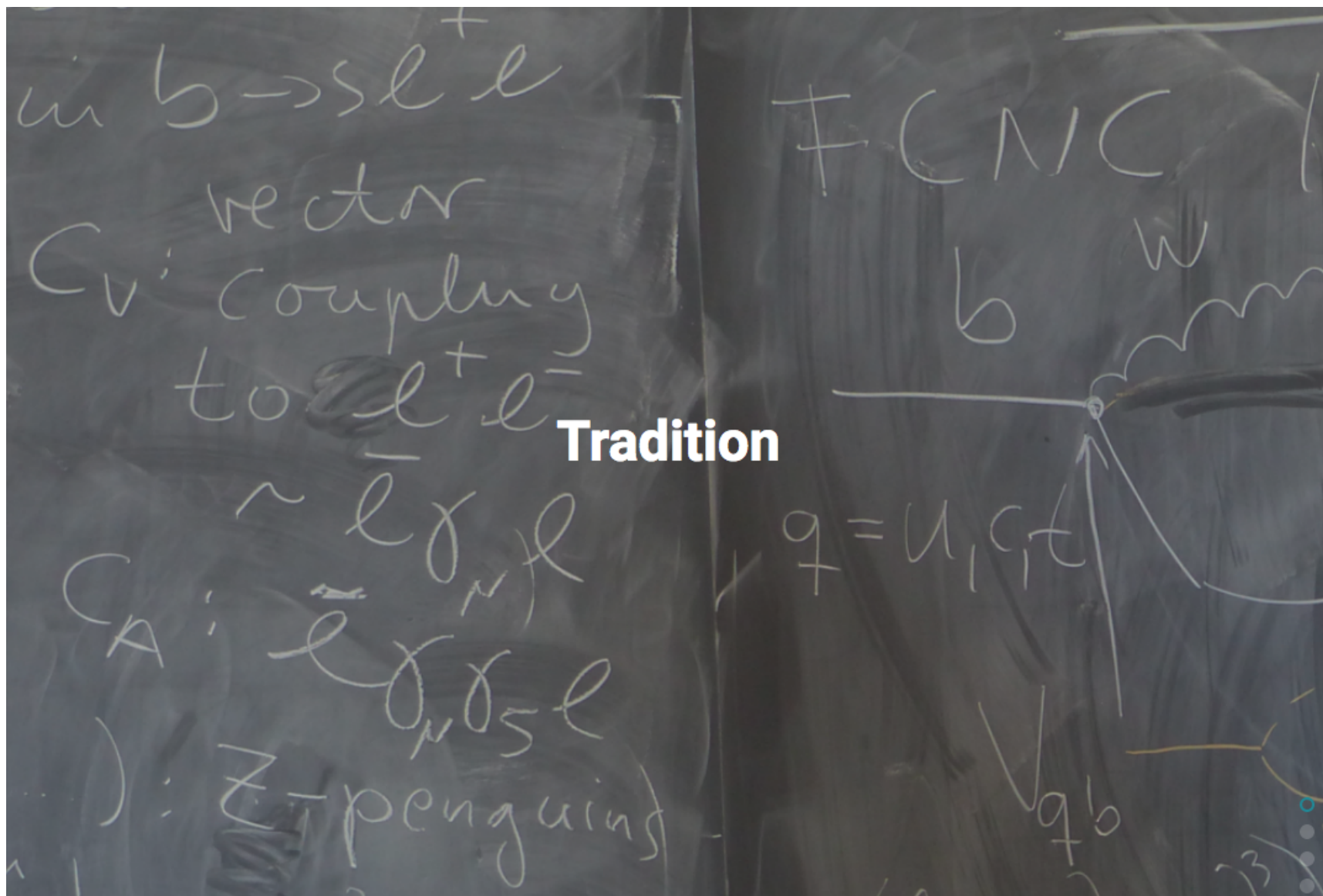


From Blackboard to New Physics

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teaching fundamental science in a german university in preparation for students

1. being fascinated
 2. to learn, being trained
 3. do first steps
 4. become an independent researcher in a competitive international environment
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1. being fascinated

2.

benefit from school, parents, friends, society, media, movies,...

science itself attracts fraction of kids "the universe", "smallest particles", "highest energies", "ultimate TOE" because of sheer olympic spirit of the subject, curiosity

views on being a scientist do not exist (adulthood too far away) or are romantic, or are stereotypes (online nerds),...

1.
2. learning and training
3. ...

at university, example of particle physics at TU Dortmund; (particle physics one of the pillars of specialization; TH +EXP)

BSC 3rd year : Nuclear & Particle physics (EXP), relativistic quantum mechanics, General relativity, BSC thesis

MSC 1st year: Introduction to Particle Theory, advanced seminars, contacts with postdocs, visitors.

MSC 2nd year: master thesis, advanced lectures and seminars, contacts with postdocs, visitors..

MSc-phase:

views on science shifted due to own involvement (its work, fun, complicated..); other type of fascinations appear:

internationalization, connections to other students/researchers, team work

its competitive

transition to becoming teachers themselves, explaining physics results to group, at meetings, collaborations, email ,...

skills beyond physics: english (in text and word), and scientific writing; "ethics", "rules" of the game (referencing copyright, sharing ideas, how to approach other researchers from other cultures,.....)

1.
2. do first steps
3. become an independent researcher in a competitive international environment

fun facts: with 1/6 of my dipl/MSc students so far I wrote a research paper

most of my dipl/MSc students pursue a PHD (not necessarily in Dortmund, not necessarily in particle physics).

at PHD level:

deeper understanding science and projects "think global act local"

getting exposed to the pleasures (travel, international working environment, .. beyond 9 to 5future is "open".., finance) and challenges (travel, international working environment, .. beyond 9 to 5future is "open".. finance)

of becoming a scientist and getting perspectives on private and professional life.

It is understood that this is critical and ideally highly creative phase; communicate that it is a critical one for everyone, including previous generations, and that it is a critical phase in life outside of research.
