



# Testimonial

Prof. A. Nussbaumer  
RESSLab

# Funding sources

## FEDRO/OFROU/ASTRA

## FOT/OFT/BAV

- Over last 8 years, 7 projects carried out at RESSLab, ranging from 100 to 360 kCHF (our part)
- Often in collaboration (other EPFL labs, ETHZ, EMPA)
- In the domain of bridges:
  - Reliability, structural safety, load models
  - Influence of heavy vehicles transport policy (platooning, special transports, updating w/savings)
- These grants are valuable because one can investigate both scientific topics and practical ones, with good visibility
- Hiring of: PhD's (2), research assistants (3), Post-docs (4)

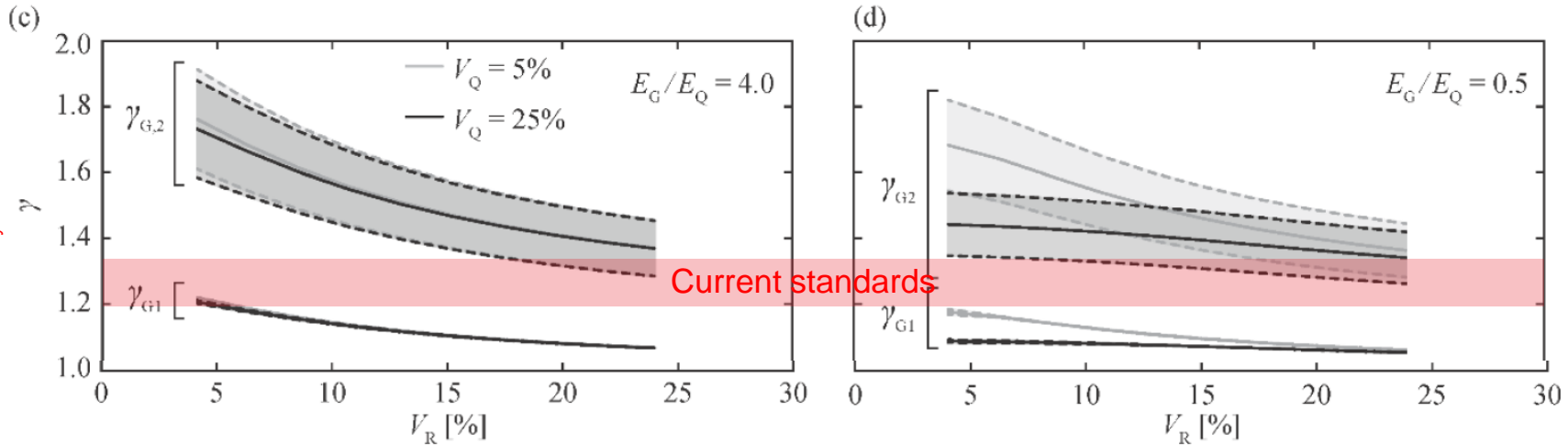
# Funding source

## FEDRO/OFROU/ASTRA

- Choice of research topic : both bottom-up and top-down (list of priority topics every 4 years)
- Submission via one of the specialized sub-committee :
  - Of research ideas, sketch with rough estimate of cost (2-3 pages)
  - Of full proposal (tendering or direct call), form similar to SNSF
- Reporting twice/year to specifically chosen accompanying committee
- Output: report (can be a thesis, with one additional chapter containing practical outcome), guideline, or standard

# Example of recent research: Updating of bridges load factors based reliability analyses

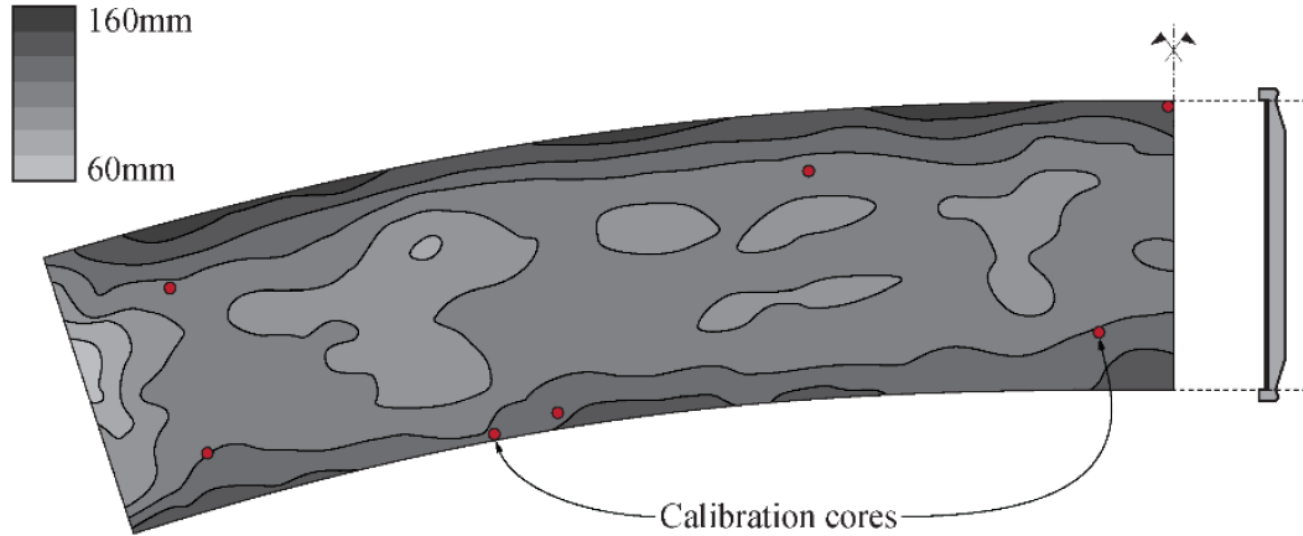
- Creation, updating of databases on real loads on road bridges (permanent and traffic loads)
- FORM reliability simulations to obtain & differentiate load factors for self-weight  $\gamma_{G1}$  and permanent loads  $\gamma_{G2}$  (fct of COV of
- Allows better evaluation and maintenance of existing infrastructures, thus savings



Aurelio Muttoni, Alain Nussbaumer, Dr Xhemsli Malja, João T. Simões, Qianhui Yu, Recalibration of partial safety factors for actions and resistances for new and existing bridges, FEDRO project AG BGT 20 02B, 2024 (report in press)

# My experience of FEDRO/FOT projects

- Accompanying committee has genuine interest in scientific questions as well as practical outcome
- Committee gives quality and scientifically competent feedback
- Project duration of 2-3 years are favoured (implementation of results in practice)
- Publication of results in scientific journals is encouraged
- Projects are defined in collaboration
- Increase of administrative part last years (FEDRO in-house financial & tasks reporting, Word report template)



**Merci**

*Typical thickness variability of  
pavement thickness on a slab bridge*

**Prof. A. Nussbaumer  
RESSLab**