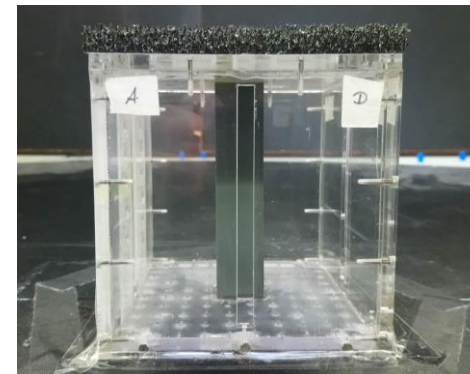
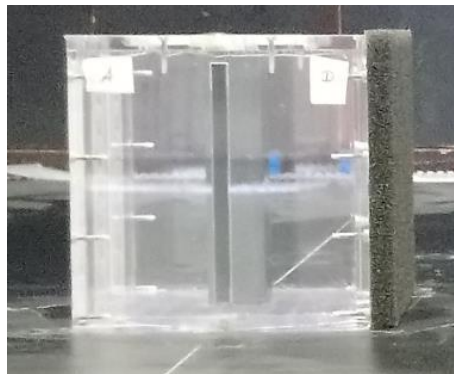


Session II-7: Update on status and planning for TWT on effect of vegetation

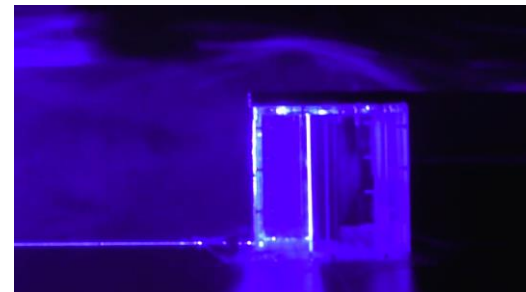
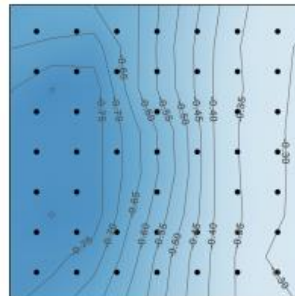
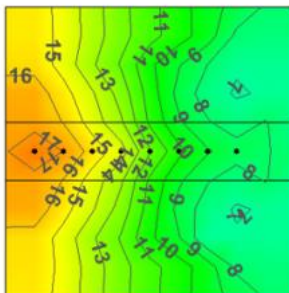
TWT 1: Effects of vegetation on flows in the urban environment

- 1st Twin Wind Tunnel Test: Feb-April 2023
- Vasiliki Pappa (PhD student) will come to KIT
- study of the effects of façade or roof greening on natural ventilation / air exchange of cubic building
(note: not urban street canyon as originally described in the proposal)



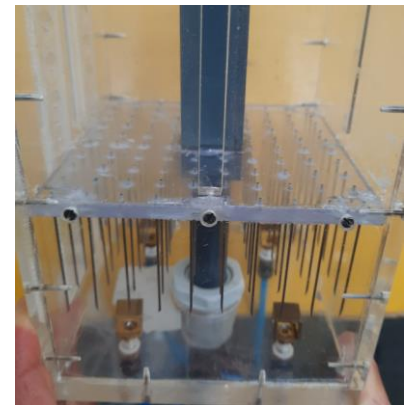
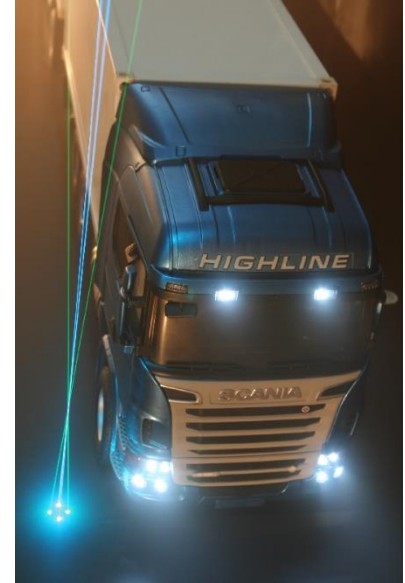
TWT 1: Effects of vegetation on flows in the urban environment

- why study of building model instead of street canyon?
- complements previous wind tunnel experiments with cube
 - tracer gas measurements (concentration data from inside cube)
 - surface pressure measurements (at outer side walls + roof)
 - flow visualization



TWT 1: Effects of vegetation on flows in the urban environment

- focus on flow field inside cube and air exchange through openings at lateral facades
- 2D Laser Doppler Velocimetry (LDV)
- status measurement technique
 - argon ion laser back from service (mid of January)
 - currently setting up the LDV system
 - pre-tests with introducing seeding done, however, final viability has to be tested in combination with LDV → tests 1st week of Feb.
 - atmospheric boundary layer wind tunnel is ready



TWT 1: Effects of vegetation on flows in the urban environment

- status building model (cube)
 - façade and roof elements ready?
 - assemblage of cube can start when all parts are at KIT (latest 6. Feb.)
 - institute workshop staff is informed and ready for assemblage
- preliminary measurement plan
 - 3 configurations: (i) no-vegetation (reference), (ii) façade greening, (iii) roof greening
 - acquisition of 3 velocity components (2 of them simultaneously) inside model building, in the lateral openings, and possibly around the cube
 - comments / amendments by Vasiliki, Demetri?

TWT 1: Effects of vegetation on flows in the urban environment

- planning for Feb-April (06.02 - 10.04)
 - test viability of seeding supply, possibly try alternatives – 1st or 2nd week of Feb.
 - laser safety instruction – in the first days of Vasiliki's arrival
 - assemblage of model building by institute workshop staff – first week
 - hands-on training LDV – first week
 - at employed LDV system + student's exercise LDV system
 - measurements and preliminary data analyses for check of data reliability / quality
- everybody of the consortium is welcome to visit us at KIT (during TWT1 phase or anytime)