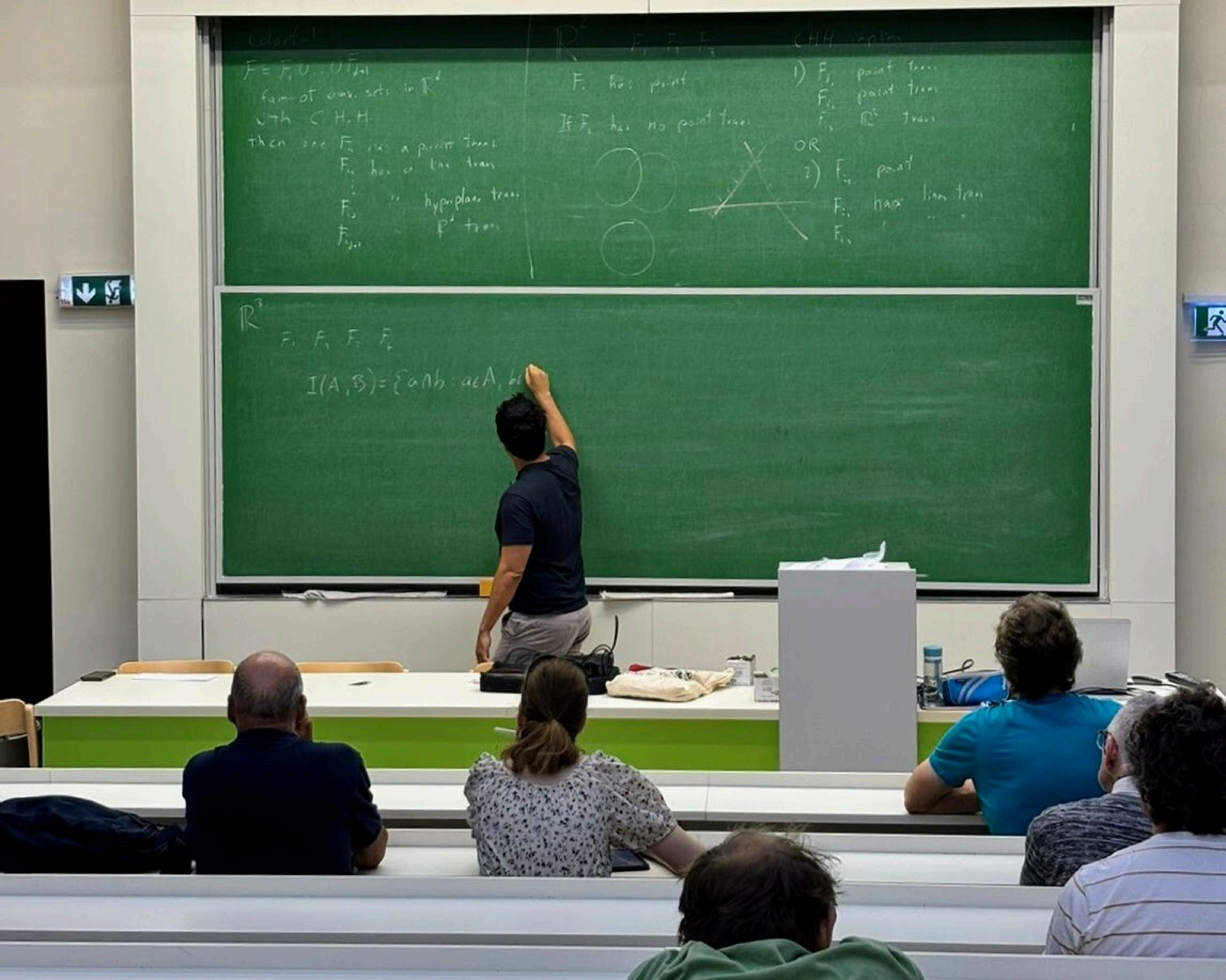
fam. of conv. sets in $\mathbb{R}^d$
with C.H.H.
then one
has a point trans
hyperplane trans
$\mathbb{R}^d$ trans
$\mathbb{R}^2$
has point
has no point trans
CHH
1)
point trans
point trans
$\mathbb{R}^2$ trans
OR
2)
point
has line trans
$\mathbb{R}^3$


F = F1 ∪ ... ∪ Fd+1
fam. of conv. sets in ℝd
with C.H.H.
then one Fi1 has a point trans.
Fi2 has a line trans
hyperplane trans
ℝd trans
ℝ2
Fi has point
If Fi has no point trans
1) Fi1 point trans
Fi2 point trans
Fi3 ℝ2 trans
OR
2) Fi1 point
Fi2 has line trans
ℝ3
I(A,B) = {a∩b : a∈A, b∈


I(A,B) = {a∩b : a∈A, b∈B}
F2 and I(F3,F4)
Lemma
∀ 1≤k≤d, m≥1 ∃ F, G
A, B fams of conv. sets, I(A,B) has a trans given by m k-flats. Then
① A has a trans by F points OR ② B has trans by G (k-1)-flats
I(F2, I(F3,F4)) d-trans
F2 has 0-trans OR I(F3,F4) has 2-trans
F3 0-trans OR F4 has 1-transv
1) Some Fi has 0-transv
OR
2) F2, F3, F4 have 1-transv.
I(F3, F4) 3-transv
then
F3 has 0 transv.
F4 has 2 transv.
(0, 1, 1, 1)
(0, 0, 0, 3)
(0, 0, 2, 2)
A, B fams of conv sets in R^2, pairwise intersecting
Is there a bounded num of lines trans. A or B?
(0, 1, 1, ..., 1)
(0, 0, 2, ..., 2)
(0, 0, 0, 3, ..., 3)
(0, ..., 0, d)