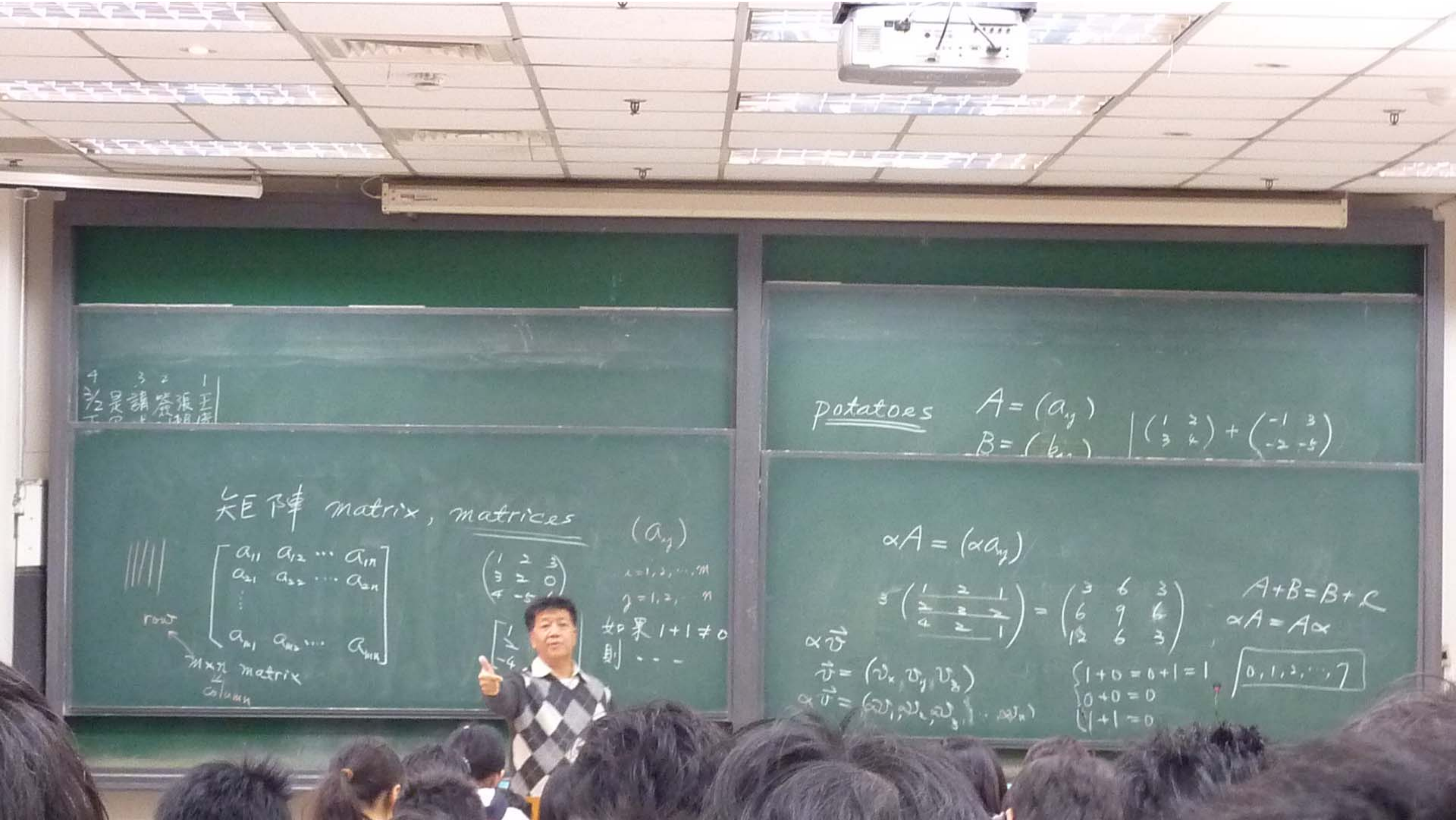
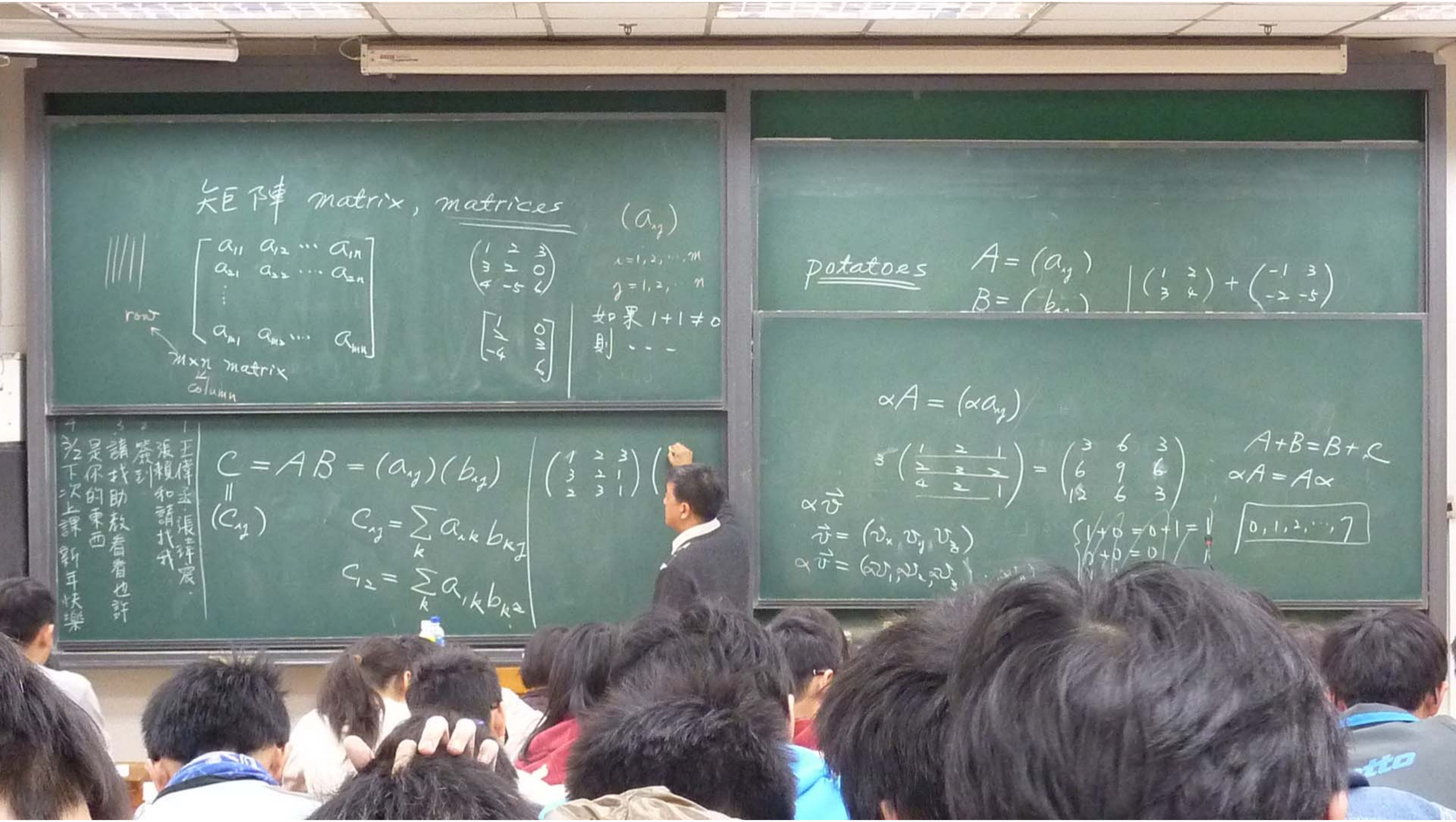
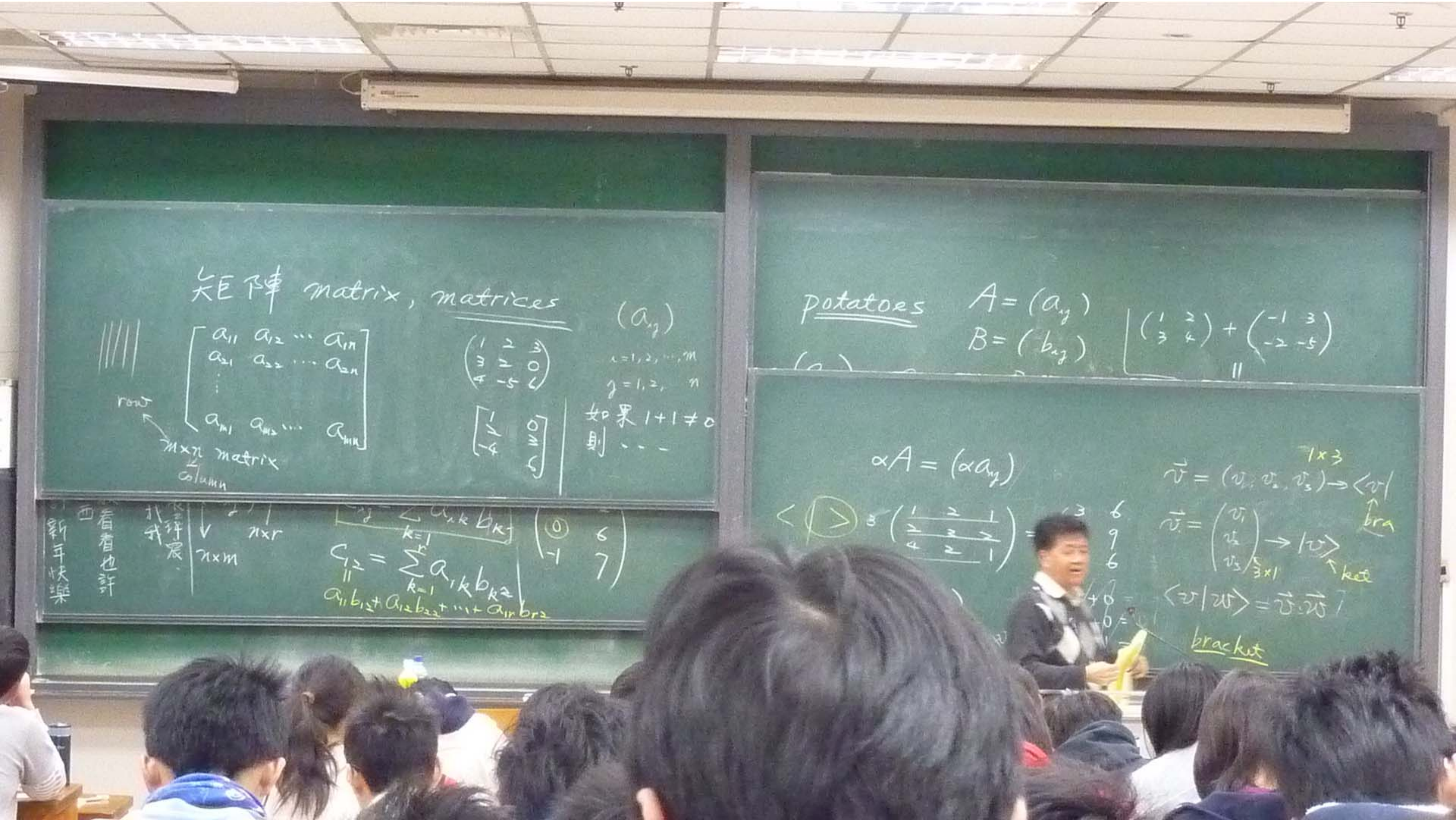
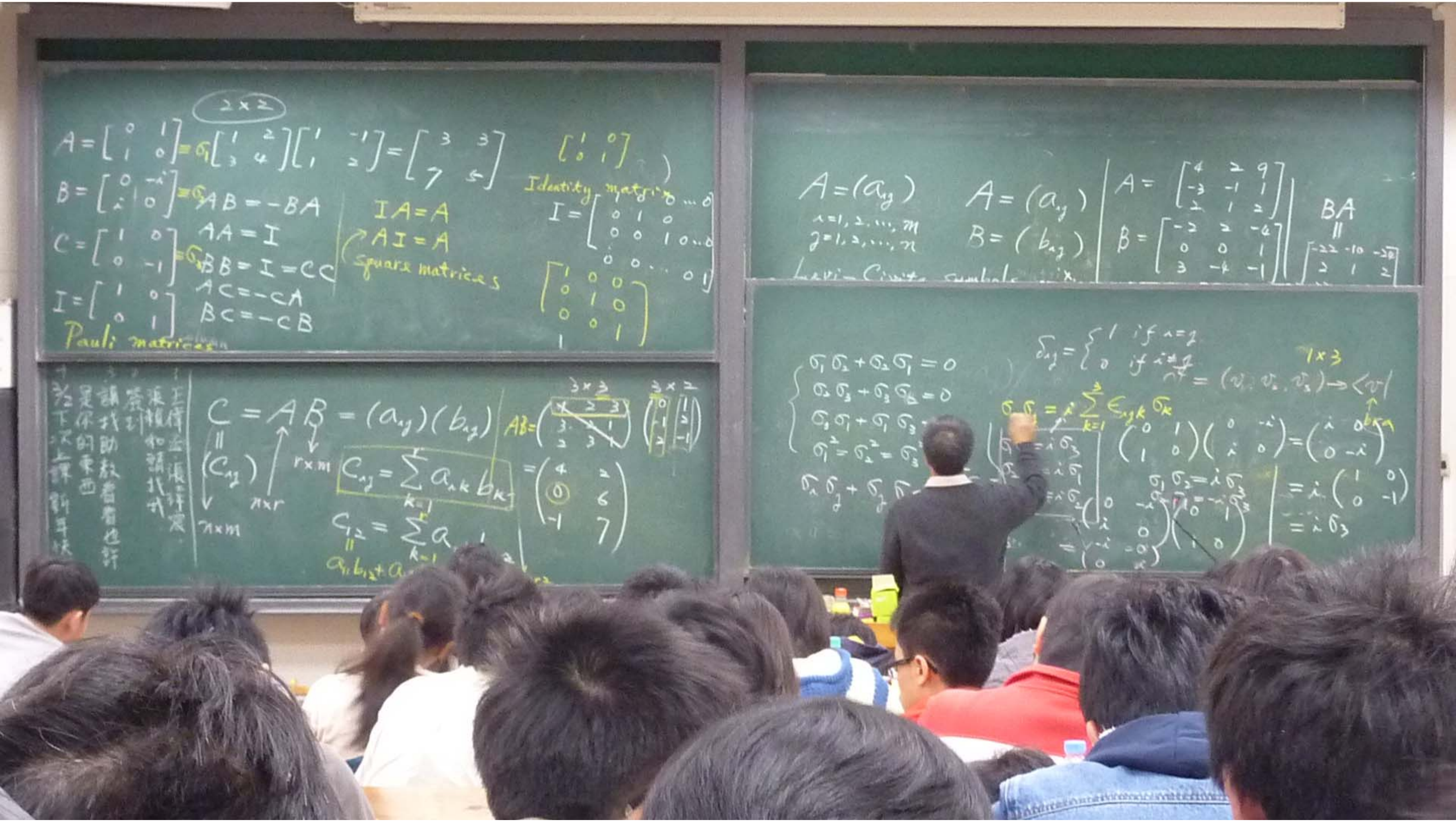
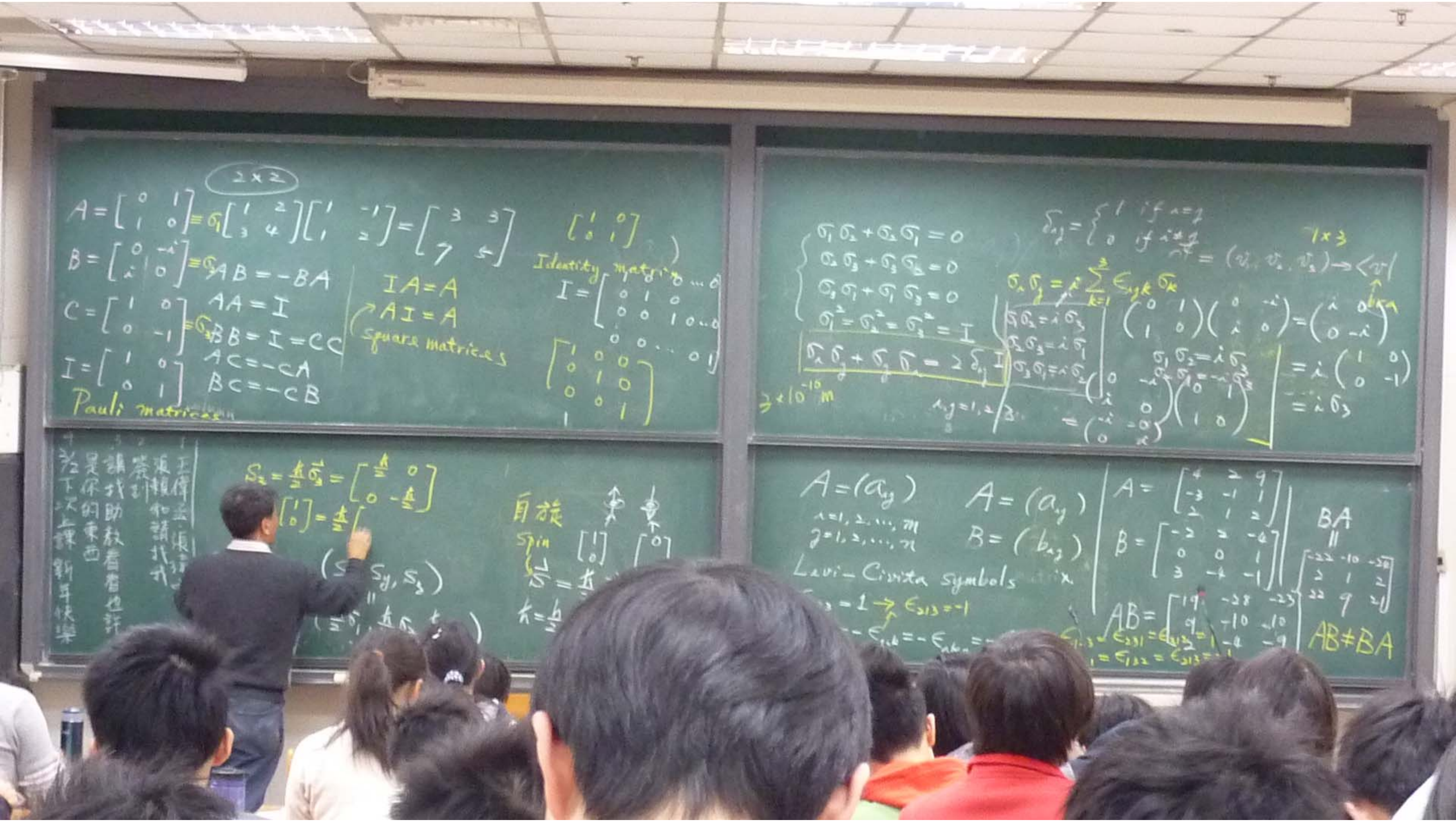


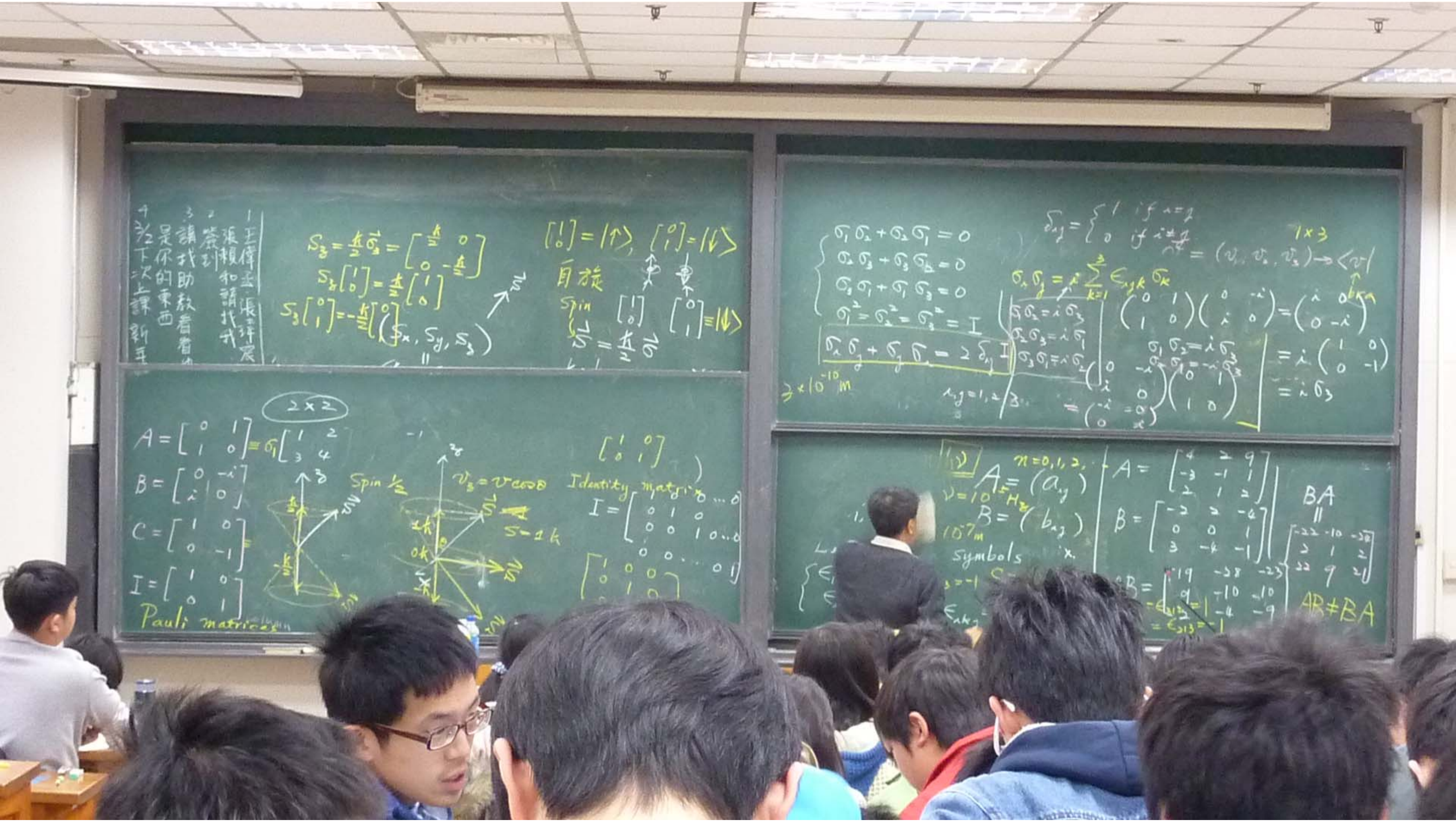
矩陣 matrix, matrices
row
m×n matrix
column
如果 1+1≠0
potatoes
A = (aij)
αA = (αaij)
A+B=B+A
αA = Aα
1+0=0+1=1
0+0=0
1+1=0


矩陣 matrix, matrices
(a_{ij})
$i=1,2,\cdots,m$
$j=1,2,\cdots,n$
如果 1+1≠0
則 - - -
row
m×n matrix
column
$C = AB = (a_{ij})(b_{ij})$
(c_{ij})
$c_{ij} = \sum_k a_{ik} b_{kj}$
$c_{12} = \sum_k a_{1k} b_{k2}$
1 王偉丞.張祥震.張頎和請找我
2 簽到
3 請找助教看看也許是你的東西
4 3/2 下次上課 新年快樂
potatoes
$A = (a_{ij})$
$B = (b_{ij})$
$\alpha A = (\alpha a_{ij})$
$A+B=B+A$
$\alpha A = A\alpha$
$\alpha\vec{v}$
$\vec{v} = (v_x\ v_y\ v_z)$
$\alpha\vec{v} = (\alpha v_1, \alpha v_2, \alpha v_3, \cdots)$
1+0 = 0+1 = 1
0+0 = 0
0, 1, 2, ⋯, 7

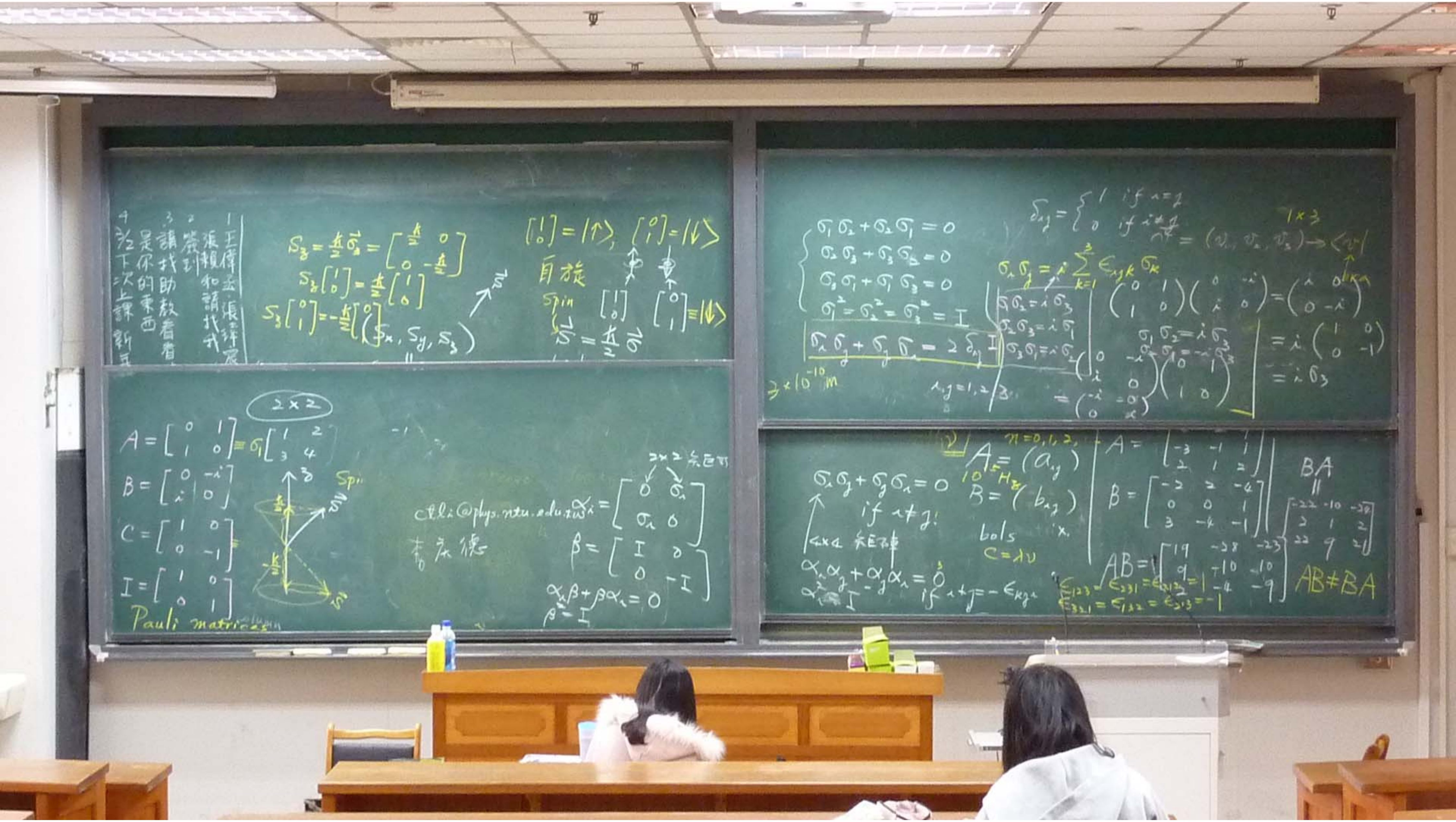

矩陣 matrix, matrices
row
m×n matrix
column
(a_ij)
如果 1+1≠0
則 ...
potatoes
A = (a_ij)
B = (b_ij)
αA = (αa_ij)
1×3
bra
ket
bracket
新年快樂
看看也許
n×m
n×r


2×2
AB = −BA
AA = I
BB = I = CC
AC = −CA
BC = −CB
Pauli matrices
IA = A
AI = A
Square matrices
Identity matrix
C = AB = (a_ij)(b_ij)
r×m
n×r
n×m
BA
1×3


2x2
Identity matrix
IA=A
AI=A
Square matrices
Pauli matrices
AB=-BA
AA=I
BB=I=CC
AC=-CA
BC=-CB
Levi-Civita symbols
自旋
Spin
AB≠BA
BA



自旋
Spin
Spin 1/2
Identity matrix
Pauli matrices
symbols
2x2
1x3
AB≠BA


Pauli matrices
2×2
自旋
Spin
ctli@phys.ntu.edu.tw
if i≠j
BA
AB≠BA