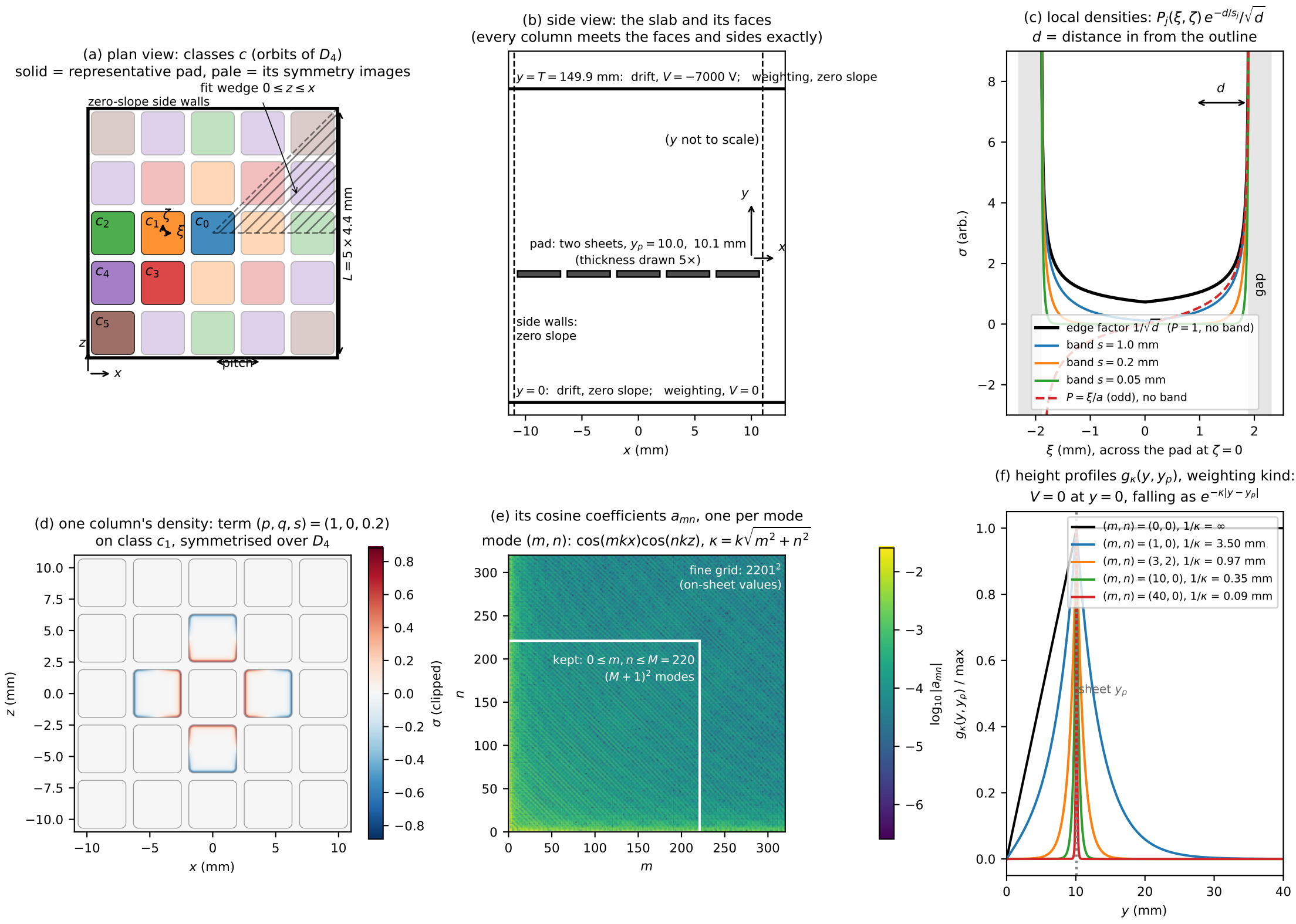
(a) plan view: classes c (orbits of D_4)
solid = representative pad, pale = its symmetry images
fit wedge $0 \le z \le x$
zero-slope side walls
C_0
C_1
C_2
C_3
C_4
C_5
ζ
ξ
$L = 5 \times 4.4$ mm
pitch
z
x
(b) side view: the slab and its faces
(every column meets the faces and sides exactly)
$y = T = 149.9$ mm: drift, $V = -7000$ V; weighting, zero slope
(y not to scale)
y
x
pad: two sheets, $y_p = 10.0,\ 10.1$ mm
(thickness drawn 5×)
side walls:
zero slope
$y = 0$: drift, zero slope; weighting, $V = 0$
x (mm)
(c) local densities: $P_j(\xi,\zeta)\, e^{-d/s_j}/\sqrt{d}$
d = distance in from the outline
d
gap
σ (arb.)
edge factor $1/\sqrt{d}$ ($P = 1$, no band)
band $s = 1.0$ mm
band $s = 0.2$ mm
band $s = 0.05$ mm
$P = \xi/a$ (odd), no band
ξ (mm), across the pad at $\zeta = 0$
(d) one column's density: term $(p, q, s) = (1, 0, 0.2)$
on class c_1, symmetrised over D_4
z (mm)
x (mm)
σ (clipped)
(e) its cosine coefficients a_{mn}, one per mode
mode (m, n): $\cos(mkx)\cos(nkz)$, $\kappa = k\sqrt{m^2 + n^2}$
fine grid: 2201^2
(on-sheet values)
kept: $0 \le m, n \le M = 220$
$(M+1)^2$ modes
n
m
$\log_{10}|a_{mn}|$
(f) height profiles $g_\kappa(y, y_p)$, weighting kind:
$V = 0$ at $y = 0$, falling as $e^{-\kappa|y - y_p|}$
$(m, n) = (0, 0)$, $1/\kappa = \infty$
$(m, n) = (1, 0)$, $1/\kappa = 3.50$ mm
$(m, n) = (3, 2)$, $1/\kappa = 0.97$ mm
$(m, n) = (10, 0)$, $1/\kappa = 0.35$ mm
$(m, n) = (40, 0)$, $1/\kappa = 0.09$ mm
sheet y_p
$g_\kappa(y, y_p)$ / max
y (mm)