

3. 令  $C(a, -a-1, 0)$  在二平面交線上, 其中  $a \in \mathbb{R}$

$$\vec{AC} = (a-1, -a, -1)$$

$$\vec{AB} = (-2, 4, 0)$$

二向量外積得法向量  $\vec{L} = (2, 1, a-2)$

$x+y+1=0$  之法向量  $\vec{M} = (1, 1, 0)$

$$\cos \frac{\pi}{4} = \frac{\vec{L} \cdot \vec{M}}{|\vec{L}| \cdot |\vec{M}|}$$

$$\frac{1}{\sqrt{2}} = \frac{(1, 1, 0) \cdot (2, 1, a-2)}{\sqrt{2} \sqrt{5 + (a-2)^2}}$$

解得  $a=4$  or  $a=0$

$$\vec{L} = (2, 1, 2) \quad \text{or} \quad \vec{L} = (2, 1, -2)$$

$$2(x-1)+1(y+1)+2(z-1)=0 \quad \text{or} \quad 2(x-1)+1(y+1)-2(z-1)=0$$

$$2x+y+2z=3 \quad \text{or} \quad 2x+y-2z=-1$$