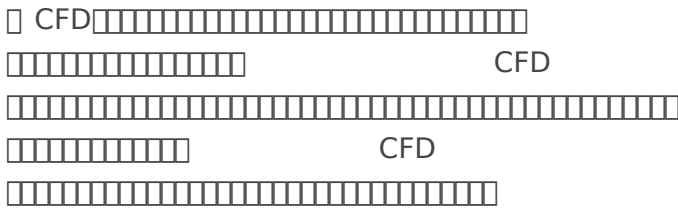
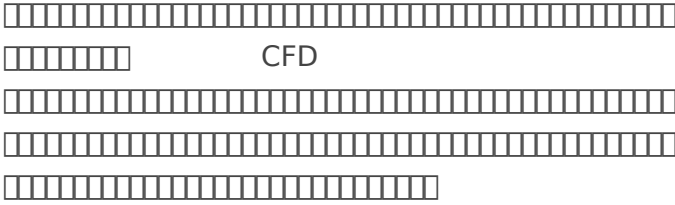


??????

CFD



AI

1.1. ?????

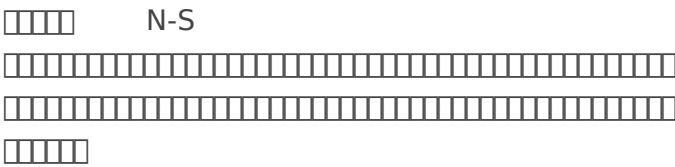


image-12

□ 1.1-1 □□□□□□□□

1. □□□



$v=v_\infty$

2. □□□□

image-23

□ 1.1-2 □□□□□□

$v_r=0$

$$v_{\theta} = -\Gamma 2\pi r$$

$$\frac{dv_{\theta}}{dt} = -\Gamma 2\pi \frac{dr}{dt}$$

$$\frac{d}{dt}(-\Gamma 2\pi r) = -\Gamma 2\pi \frac{dr}{dt}$$

$$-\Gamma 2\pi \frac{dr}{dt} = -\Gamma 2\pi \frac{dr}{dt}$$

$$-\Gamma 2\pi \frac{dr}{dt} = -\Gamma 2\pi \frac{dr}{dt}$$

$$-\Gamma 2\pi \frac{dr}{dt} = -\Gamma 2\pi \frac{dr}{dt}$$

image-34

□ 1.1-3 □□

image-45

□ 1.1-4 □□□□ Γ □□□□

$$dv = \Gamma 4\pi dl \times r |r|^3$$

$$dv = \Gamma 4\pi dl \times r |r|^3$$

$$\frac{dv}{dr} = \Gamma 4\pi dl \times r |r|^3$$

image-56

□ 1.2-1a

image-59

□ 1.2-1b

1.2-1

$$v_{\theta} = -\Gamma 2\pi r$$

$$v_r = 10 - \frac{20\pi}{2\pi r^2} \cos\theta$$

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$$v_{\theta} = -\frac{\kappa \cdot \sin\theta}{2\pi \cdot r^2} \quad v_r = -\frac{\kappa \cdot \cos\theta}{2\pi \cdot r^2}$$

$$v_{\theta} = \frac{-\Gamma}{2\pi r} \quad \Gamma = 2\pi$$

$$P$$

$$v_{\theta} = 0 - \frac{20\pi \cdot \sin 0}{2\pi r^2} - \frac{2\pi}{2\pi r^2} = -1$$

$$v_r = 10 - \frac{20\pi \cdot \cos 0}{2\pi r^2} - 0 = 0$$



1.2-2,1.2-3

image-60

1.2-2

image-61

1.2-3

Revision #5

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