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Fluent
Ra₁

Gambit
 $\alpha = 1$

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$$y = \sigma(x) = a \cdot \sin\left(\frac{2\pi x}{l}\right)$$

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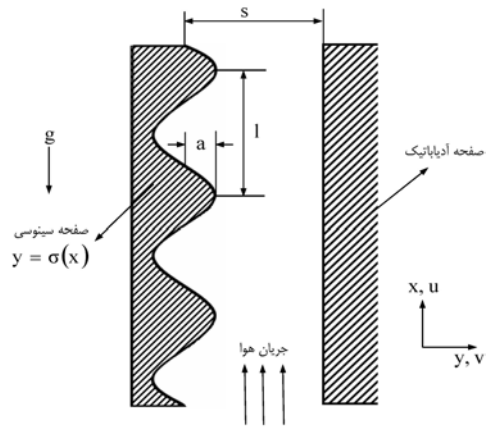
a

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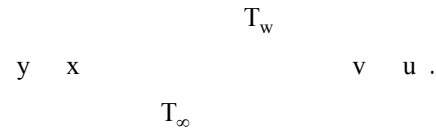
x

$$T = T_\infty$$

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PRESTO
 SIMPLE
 Second Order Upwind



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$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = 0. \quad (1)$$

$$\rho \left(u \frac{\partial u}{\partial x} + v \frac{\partial u}{\partial y} \right) = -\frac{\partial P}{\partial x} + \mu \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \right) + \rho g \beta (T - T_\infty) \quad (2)$$

$$\rho \left(u \frac{\partial v}{\partial x} + v \frac{\partial v}{\partial y} \right) = -\frac{\partial P}{\partial y} + \mu \left(\frac{\partial^2 v}{\partial x^2} + \frac{\partial^2 v}{\partial y^2} \right) \quad (3)$$

$$\rho c \left(u \frac{\partial T}{\partial x} + v \frac{\partial T}{\partial y} \right) = k \left(\frac{\partial^2 T}{\partial x^2} + \frac{\partial^2 T}{\partial y^2} \right) \quad (4)$$

$$g \quad \mu \quad P \quad \rho$$

$$k \quad \beta$$

$$u, v = 0$$

$$T = T_w$$

$$\partial T / \partial y = 0$$

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$$\alpha = /$$

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.CCD

$$\lambda = / \text{ nm} \quad \text{mW}$$

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$$^{\circ}\text{C} \leq T_w \leq ^{\circ}\text{C}$$

$$s/a = l, l, \dots, \infty$$

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$$h_x = -k \cdot \frac{dT}{dy} \cdot \frac{1}{(T_w - T_{\infty})}$$

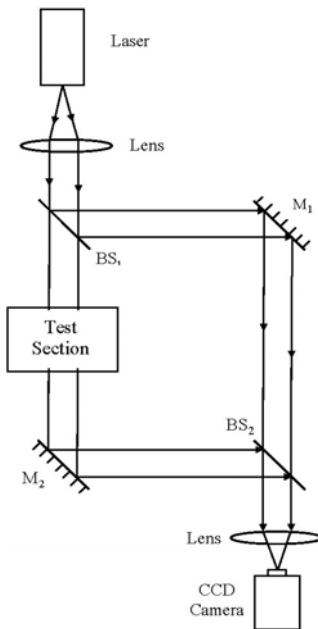
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$$Nu_x = -\frac{dT}{dy} \cdot \frac{x}{(T_w - T_{\infty})}$$

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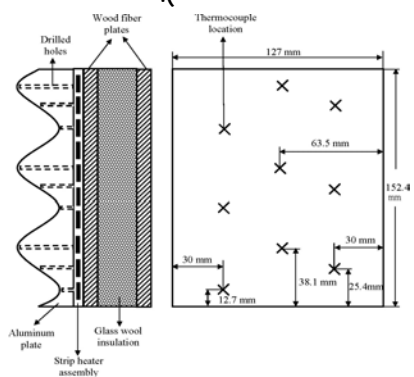
$$T_f = \frac{T_w + T_{\infty}}{2}$$

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BS₂ BS₁ M₂ M₁)

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M

Ψ

Φ₁, Φ₂, ..., Φ_M

Ψ

:

v

$$\delta\Psi = \sqrt{\sum_{i=1}^M \left(\frac{\partial\Psi}{\partial\varphi_i} \delta\varphi_i \right)^2} \quad ()$$

$\delta\varphi_1, \delta\varphi_2, \dots, \delta\varphi_M$

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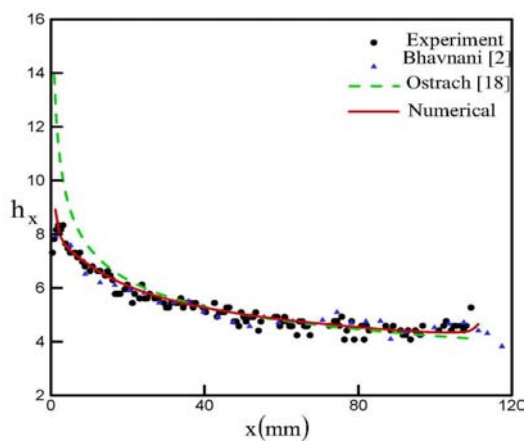
$$\alpha = /$$

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x

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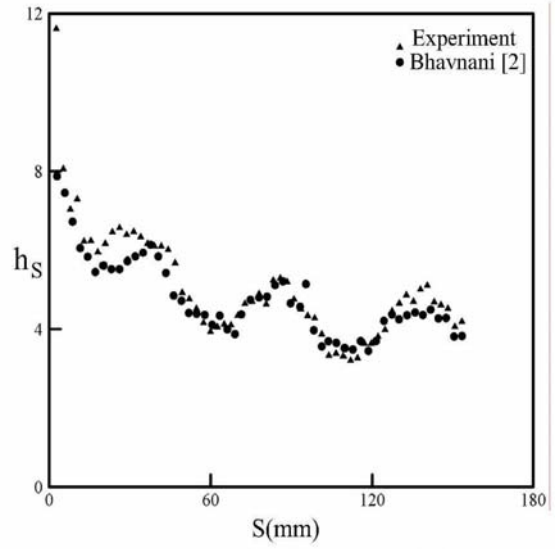
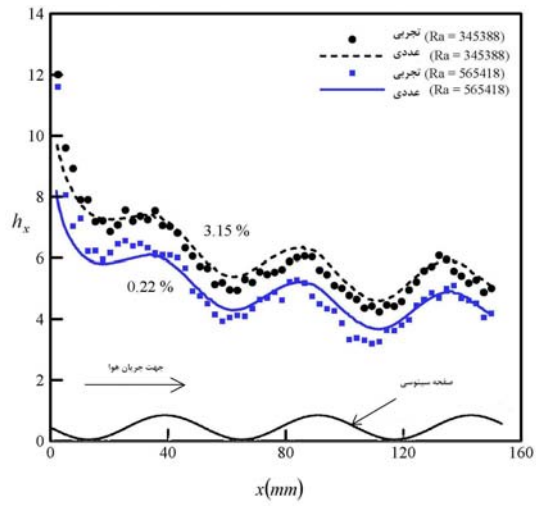
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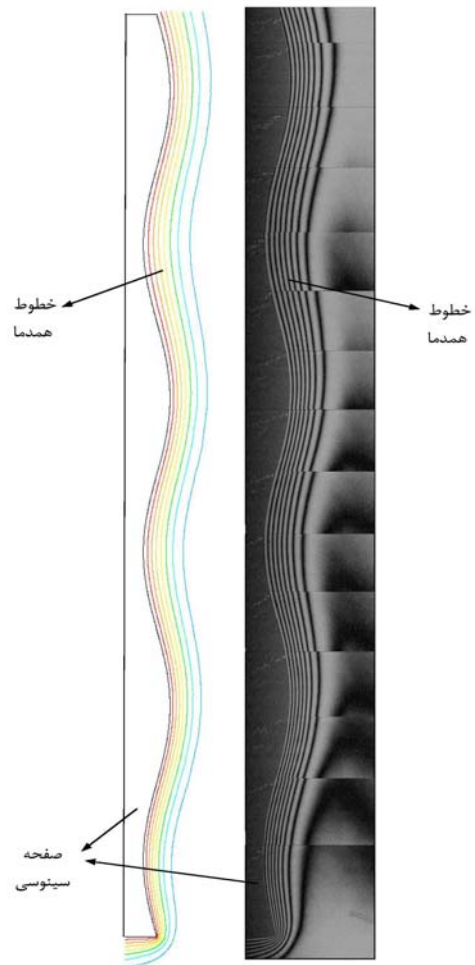
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$$Ra_1 =$$



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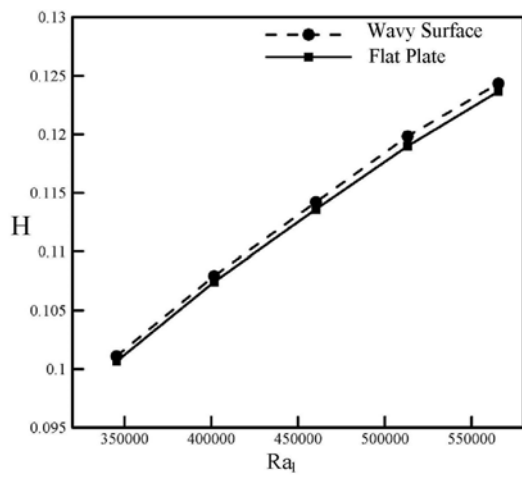
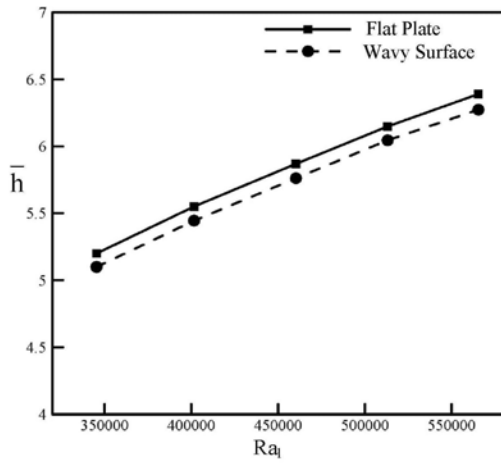
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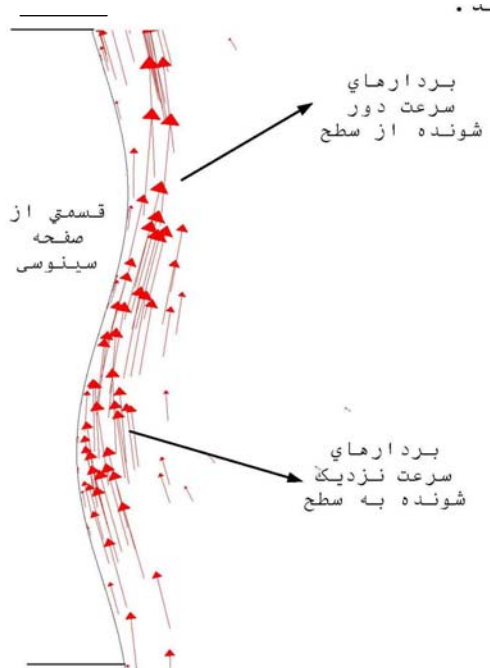


$$H = \bar{h} \cdot A$$

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$(s/a)_{opt}$

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$(s/a)_{opt}$

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s/a

$(s/a)_{opt}$

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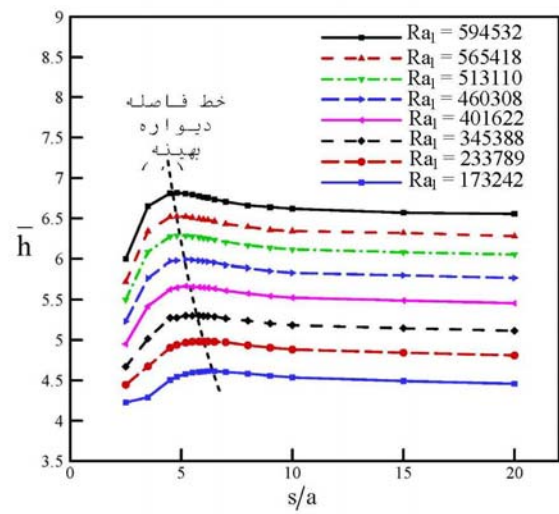
$(s/a)_{opt}$

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$s/a =$

$s/a =$

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(m)

: a

	(K)	: T	(J/kg.K)	: c
(m/s) x ,y		: u, v	(m/s ²)	: g
(m)		: x, y		: Gr
a/l		: α	(W/m ² .K)	: h
(1/K)		: β	(W/ K)	: H
()		: φ	(W/m.K)	: k
(m)		: λ	(m)	: l
(kg/m.s)		: μ	Gr.Pr	: Nu
(kg/m ³)		: ρ	(Pa)	: P
		: σ		: Pr
()		: Ψ	(m)	: S
			(m)	: S

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1 - Total Heat Transfer

2 - Mach-Zehnder Interferometer
