
WENO scheme

2016 9 1 9 30

Computational Flow Physics Laboratory

CFD

CFD

WENO scheme

WENO scheme

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: Assis. Prof. Eric Johnsen

CFD(Computational Fluid Dynamics)

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WENO scheme

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2

WENO scheme 3

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WENO scheme

WENO scheme

WENO scheme

WENO scheme

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WENO scheme

2

WENO scheme

$n + 1$

$$f_i^{n+1} = f_i^n - \frac{\Delta t}{\Delta x} (\widehat{F_{i+1/2}^n} - \widehat{F_{i-1/2}^n})$$

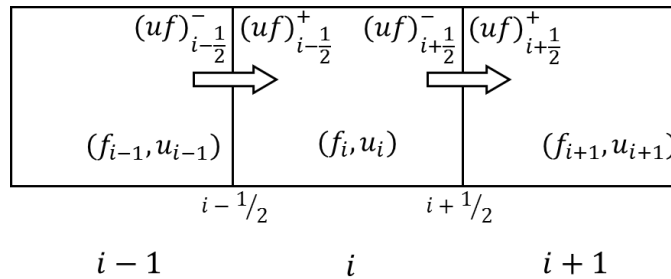
$\widehat{F_{i+1/2}^n}$

$$\widehat{F_{i+1/2}^n} = \frac{w_0}{w_0 + w_1 + w_2} V_0 + \frac{w_1}{w_0 + w_1 + w_2} V_1 + \frac{w_2}{w_0 + w_1 + w_2} V_2$$

2 $u f$ Flux

w V

Flux



2 WENO scheme

WENO scheme

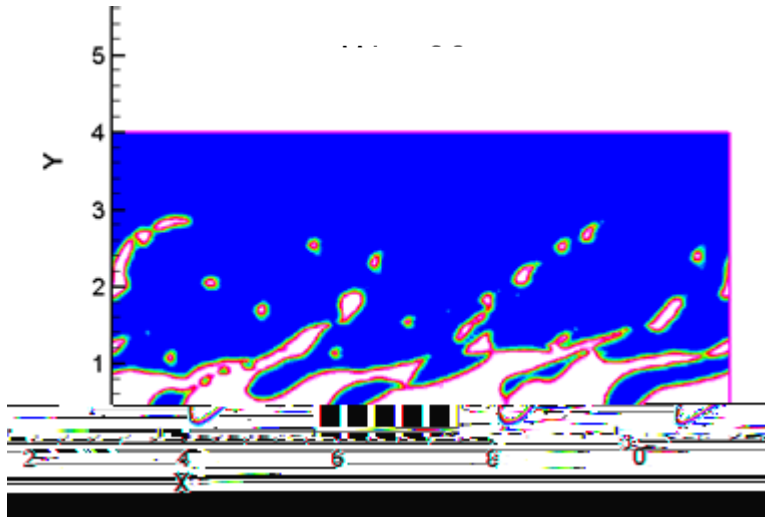
$$\rho_{(\Phi)} \left(\frac{\partial \mathbf{u}}{\partial t} + (\mathbf{u} \cdot \nabla) \mathbf{u} \right) = -\nabla p + \frac{1}{Re} \nabla (2\mu_{(\Phi)} (\nabla \mathbf{u})) + \frac{1}{We} (\nabla \cdot \mathbf{n}) \nabla H_{(\Phi)} + F_{sf}$$

WENO scheme

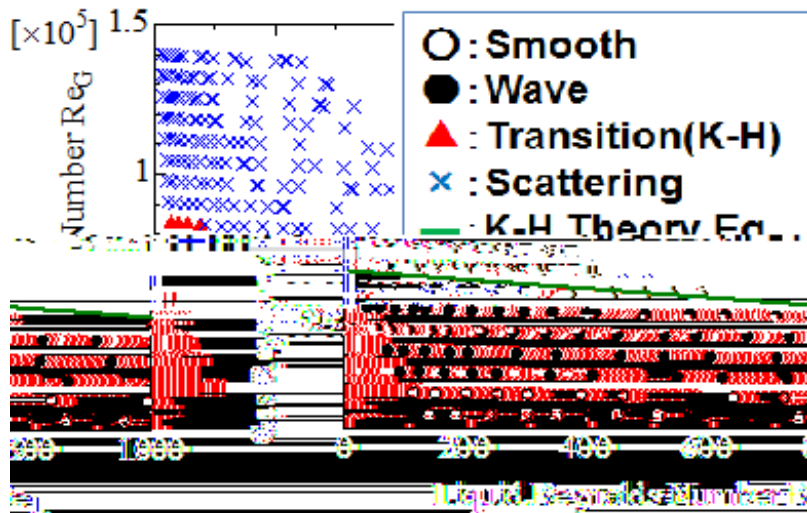
WENO scheme

$$\frac{\partial f}{\partial t} + \frac{\partial}{\partial x} (uf) + \frac{\partial}{\partial y} (vf) = 0$$

ρ_g		X	u_g	
ρ_l	10.0	X	u_l	
		Y	u_g	
		Y	u_l	
Δt			We	
Reg				



3



4

4

(26

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4

3

4

8000

100

CFD

WENO scheme

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Eric Johnsen

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