

$p$ : ordem do método

Erros Razões

$$\|u_e - u\|_\infty = O(h^p)$$

$$\|e\|_\infty = \max_{1 \leq i \leq n} |e_i|$$

$$\|e\|_2 = \sqrt{\sum_{i=1}^n |e_i|^2}$$

$H$	$e_H$	
$h$	$e_h$	$e_H/e_h$

$$h = \frac{H}{2}$$

$$\frac{e_H}{e_h} \approx \frac{O(H^p)}{O\left(\left(\frac{H}{2}\right)^p\right)} \approx O\left(\frac{H^p}{\frac{H^p}{2^p}}\right) \approx O(2^p)$$

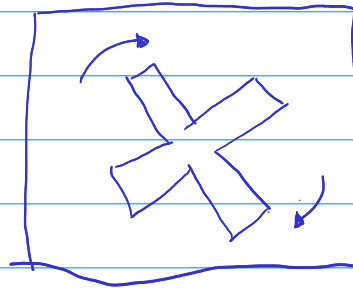
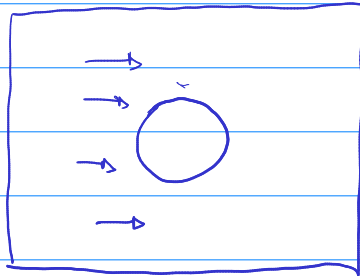
$p=1$  Razões  $\rightarrow 2$

$$\text{Razões } \log_2\left(\frac{e_H}{e_h}\right) \approx \bar{p}$$

$p=2$  Razões  $\rightarrow 4$

Domínio

$\rightarrow$  Análise  
em uma  
malha  
complexa

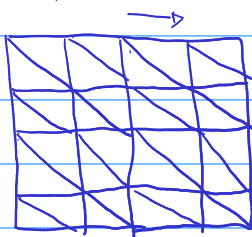


$\rightarrow$  Análise na  
malha uniforme

$h_{\text{mínimo}}$   
 $\rightarrow h_{\text{máximo}}$

$h_{\text{máximo}}/2$

Gráfico 8, 32, 128, 512, 2048



$2 \times 2$

$N$	Erro	Razões ou Ordem
8		
32		