





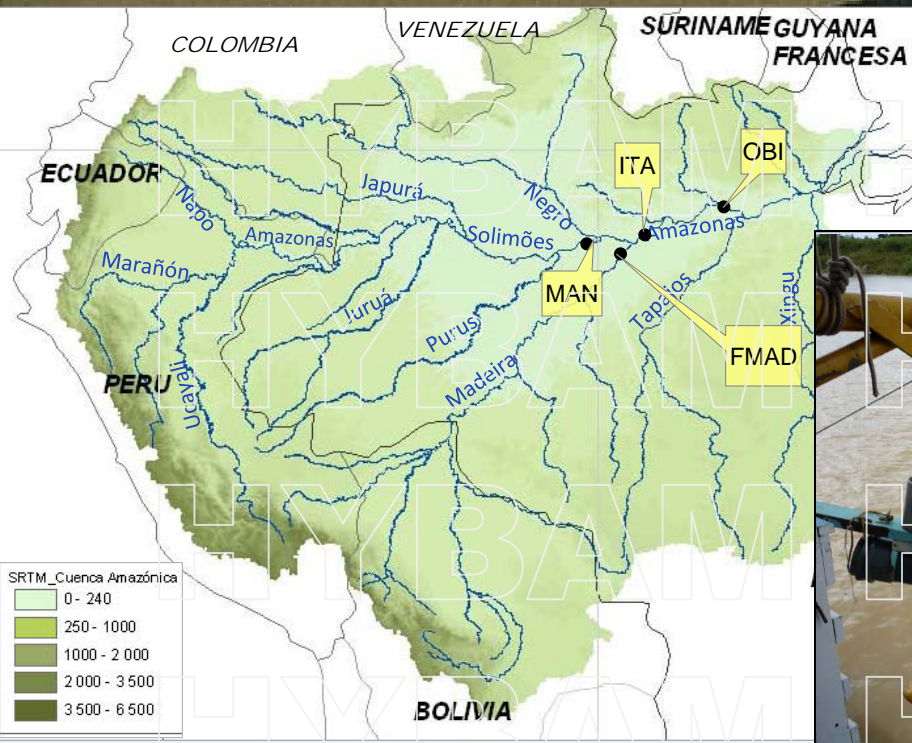








# Les mesures in-situ...



Concentrations (fins < 63 μm < grossiers)

+

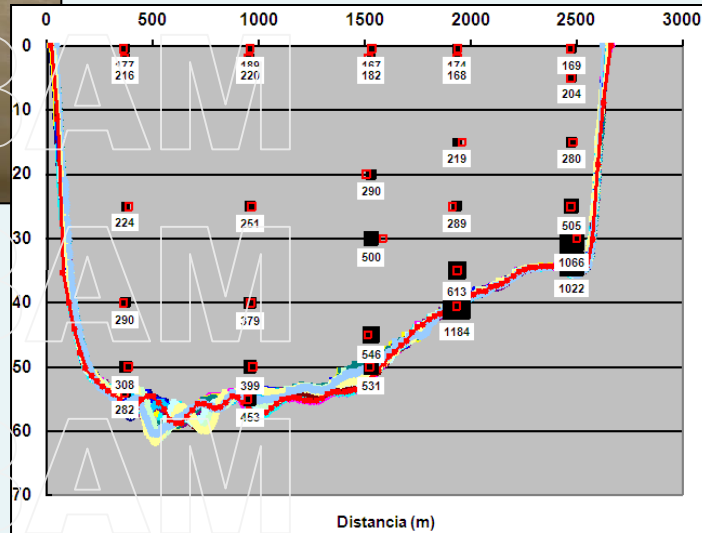
Analyses granulométrie

+

Profils de turbidimétrie

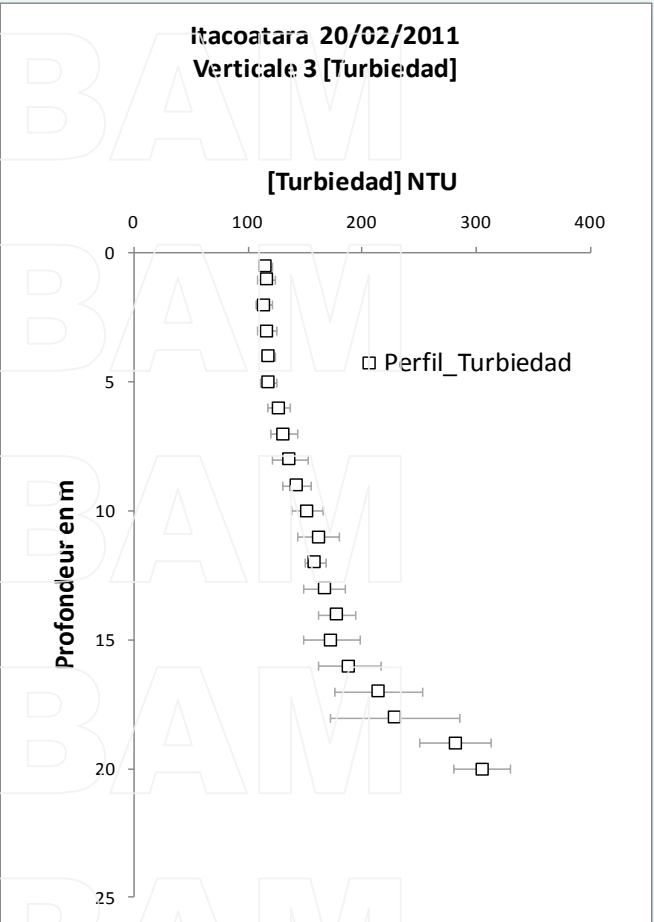
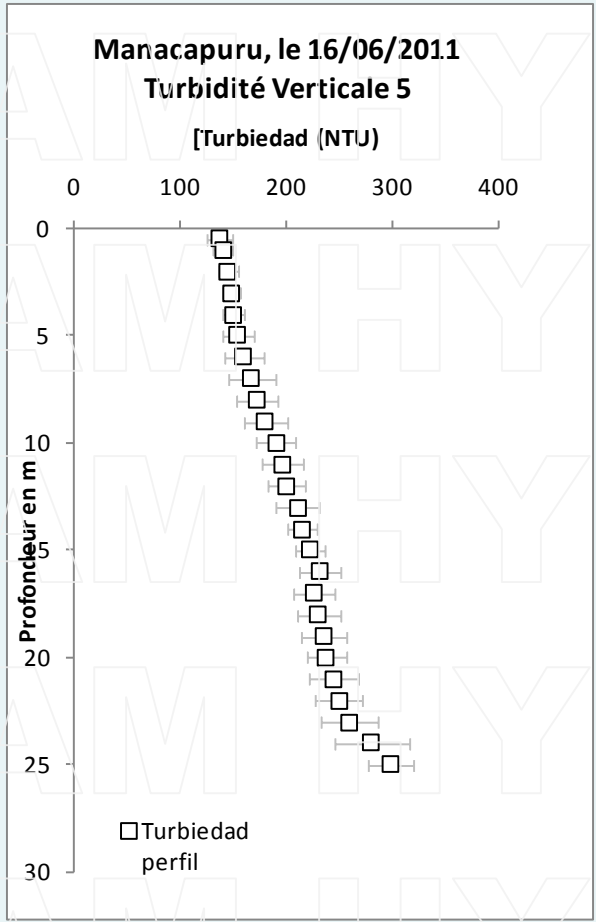
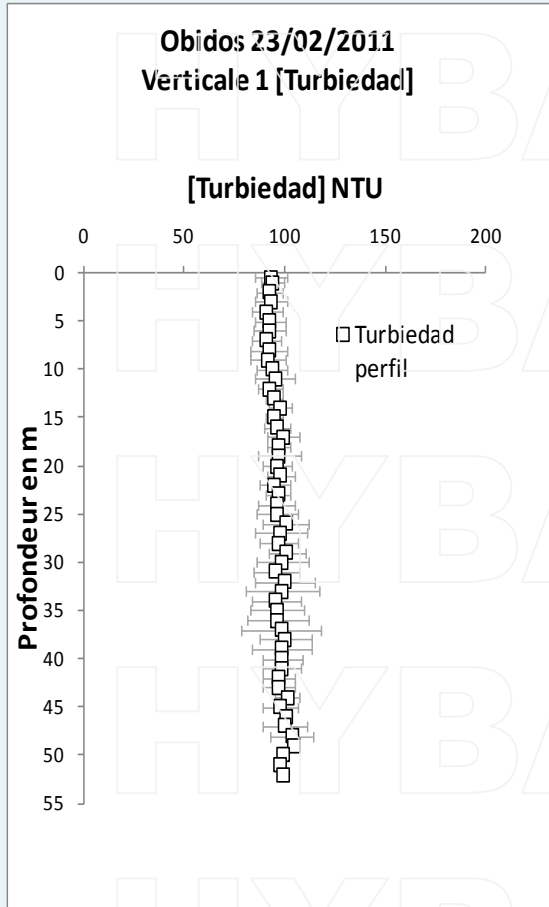
4 stations:

- Manacapuru
- Itacoatiara
- Foz de Madeira
- Obidos



# Exemples de profils de turbidité

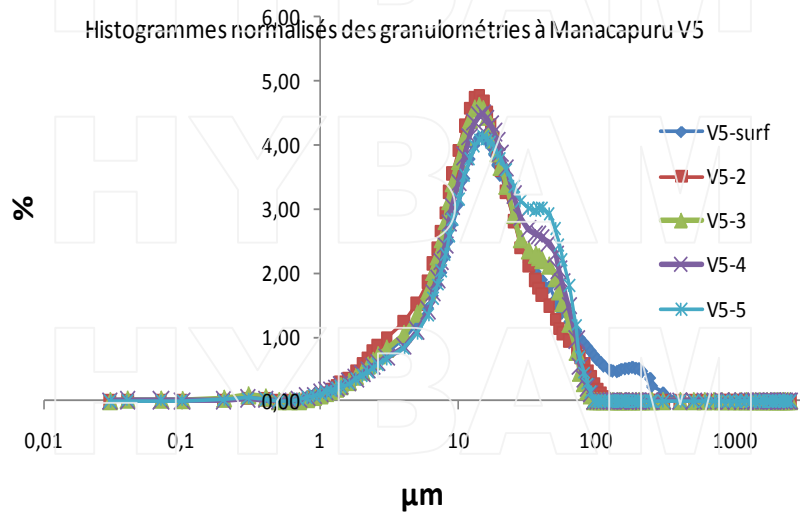
LVD AM LVD AM LVD AM



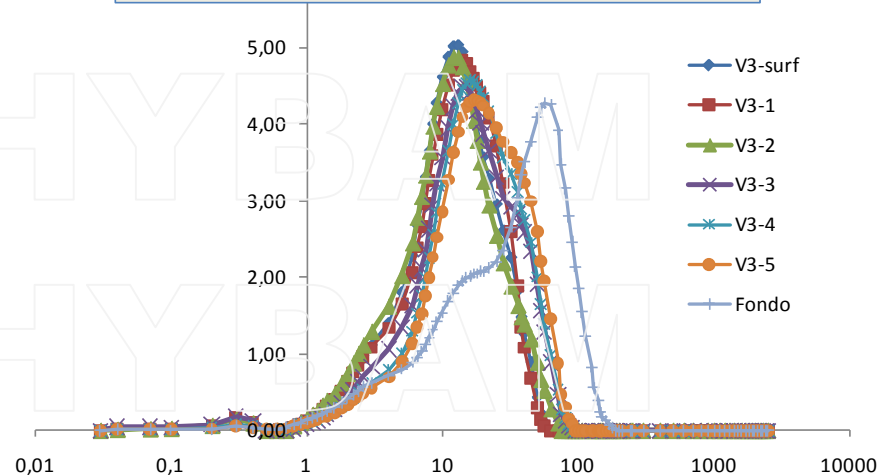


# La granulométrie

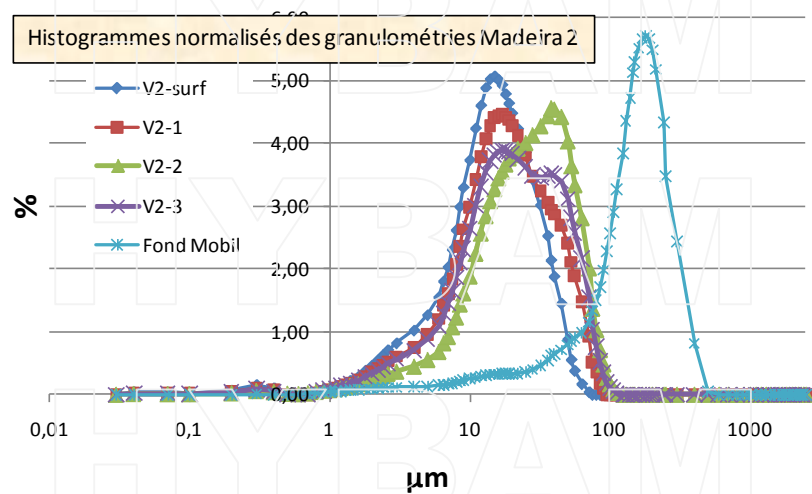
Histogrammes normalisés des granulométries à Manacapuru V5



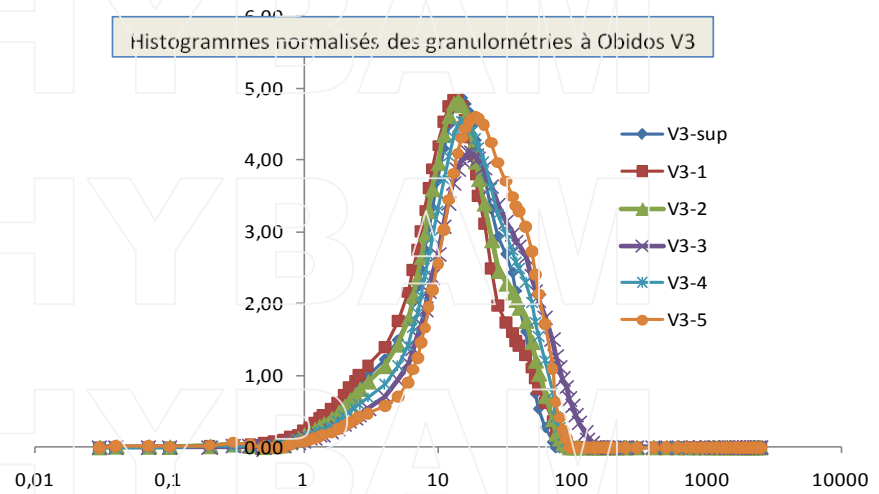
Histogrammes normalisés des granulométries à Itacoatiara V3



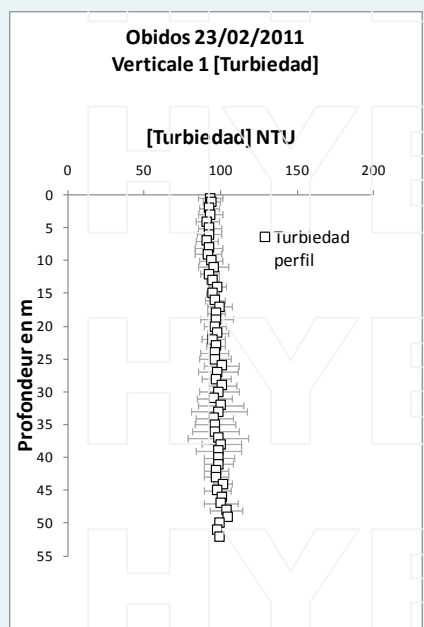
Histogrammes normalisés des granulométries Madeira 2



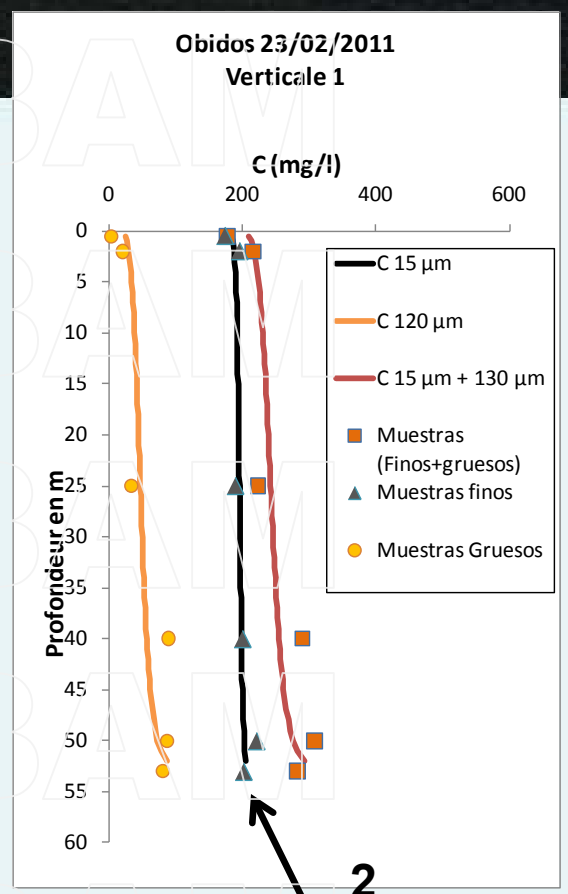
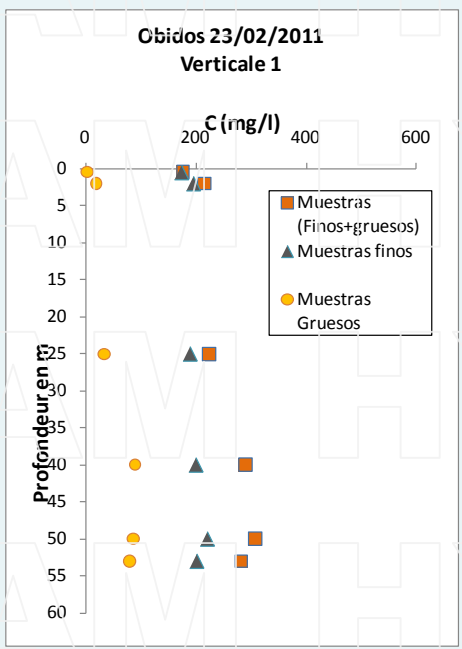
Histogrammes normalisés des granulométries à Obidos V3



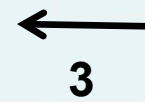
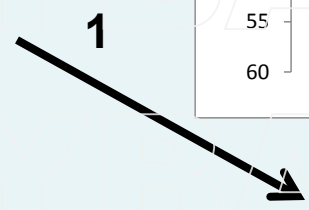
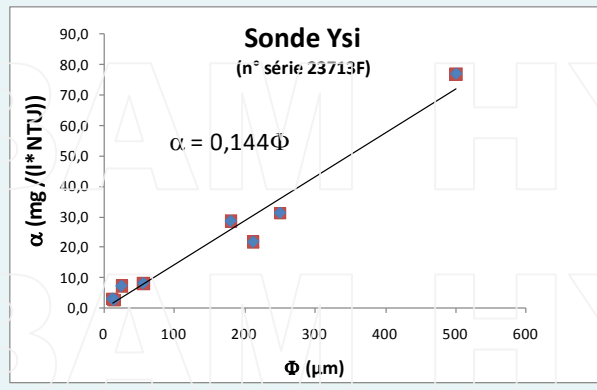
# Analyse de profil... cas simple.



+

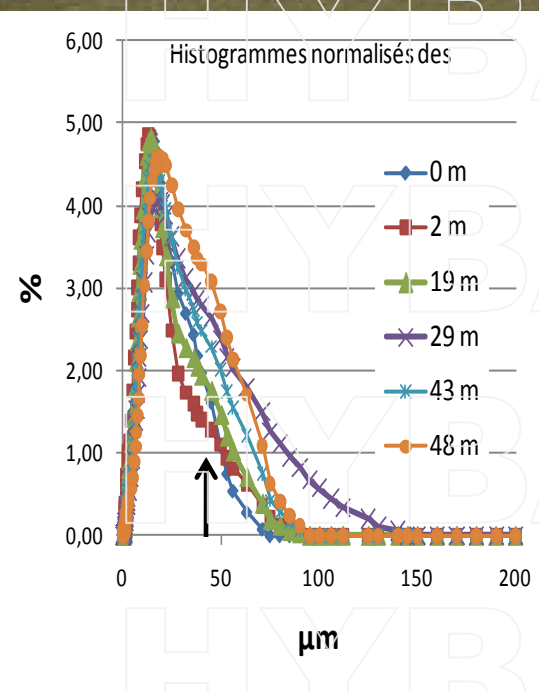


$\Phi \sim 15 \mu\text{m}$   
+/- 3

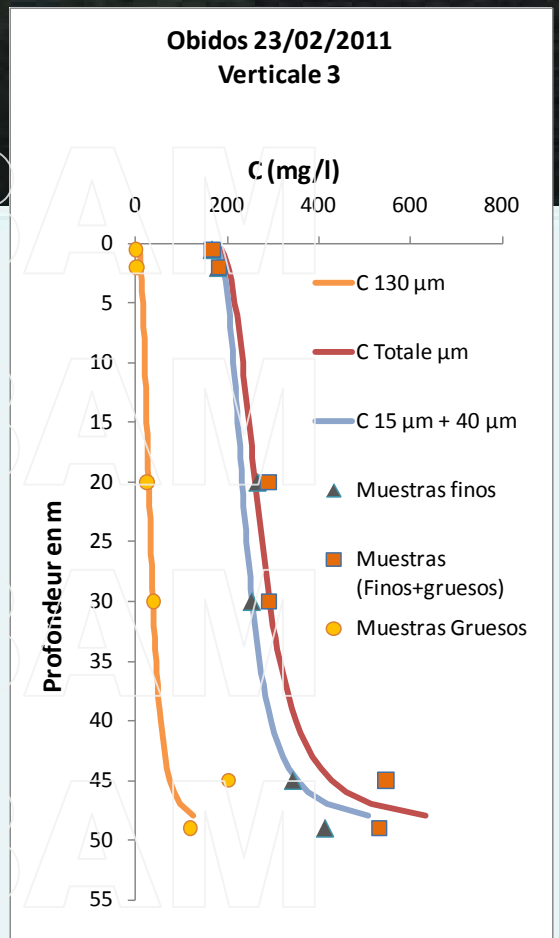
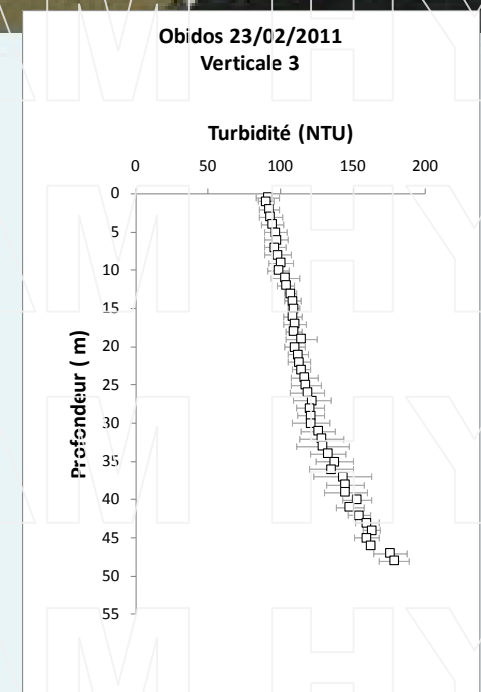


$C(z) / T(z) = \alpha(z) \sim 2 \pm 0,1$

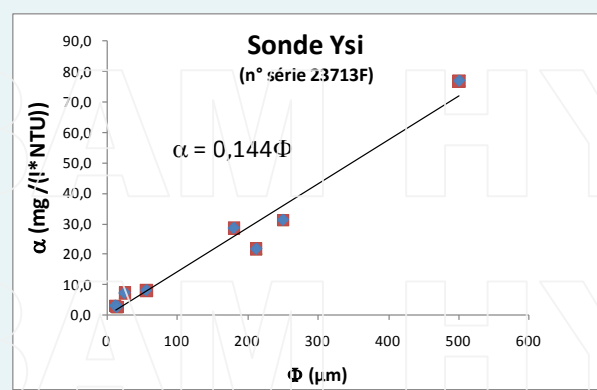
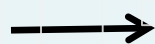
# Analyse de profil... cas moins simple.



+

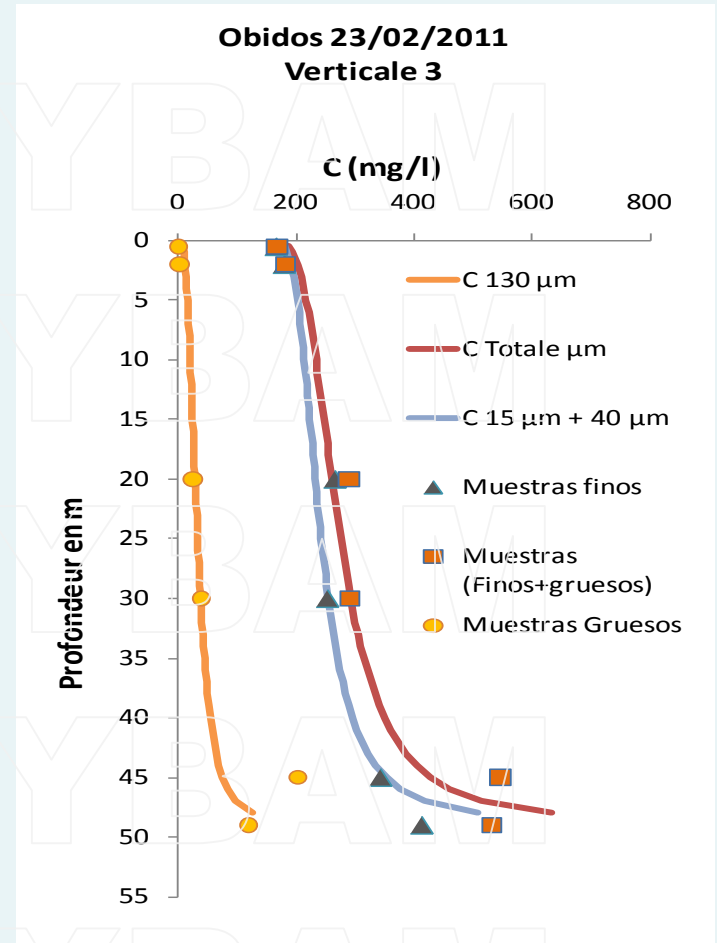
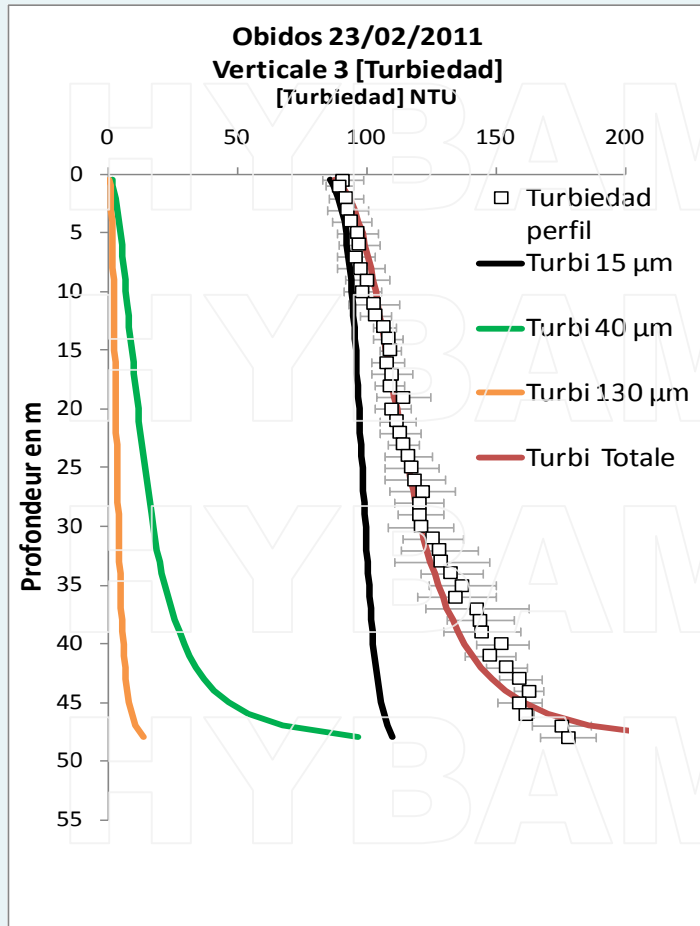


$\Phi_1 \sim 15 \mu\text{m}$   
 $\pm 3$   
 +  
 $\Phi_2 \sim 40 \mu\text{m}$   
 $\pm 5$



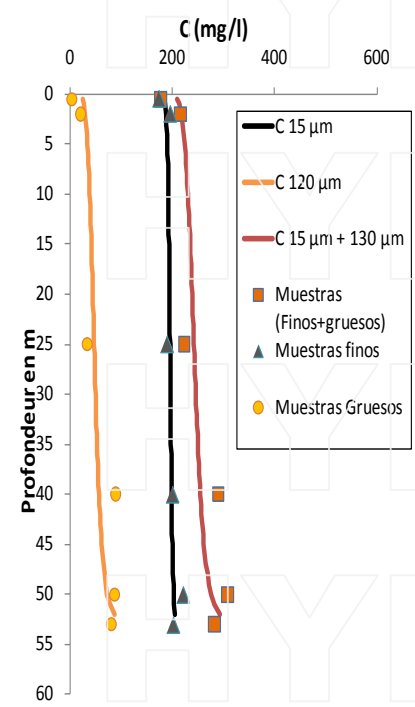
↑  
 $\alpha_2 \sim 3 \pm 0,1$   
 $\alpha_1 \sim 2 \pm 0,1$   
 +  
 **$C_{15} = \text{Rouse(Verticale1)}$**

# Analyse de profil... cas moins simple.

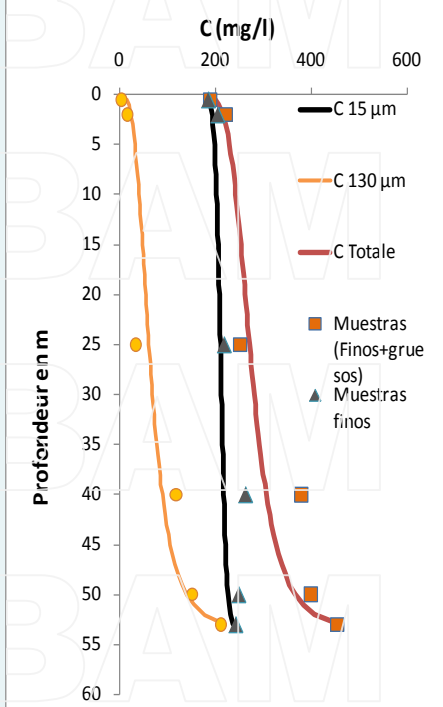


# Profils de concentration à Obidos (23/ 02/ 2011)

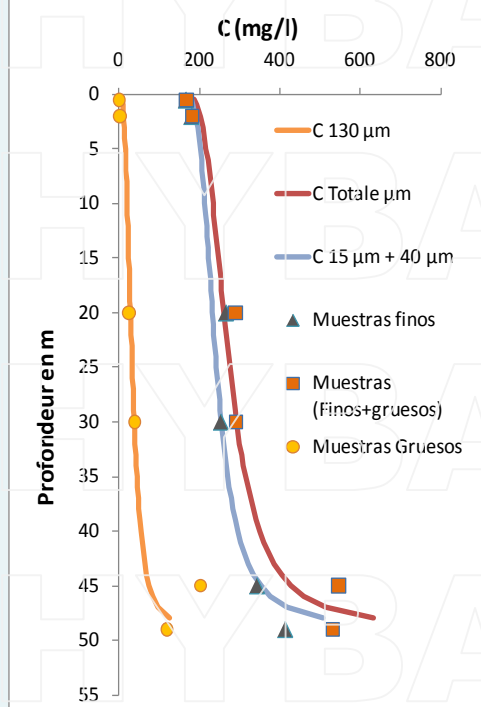
Obidos 23/02/2011  
Verticale 1



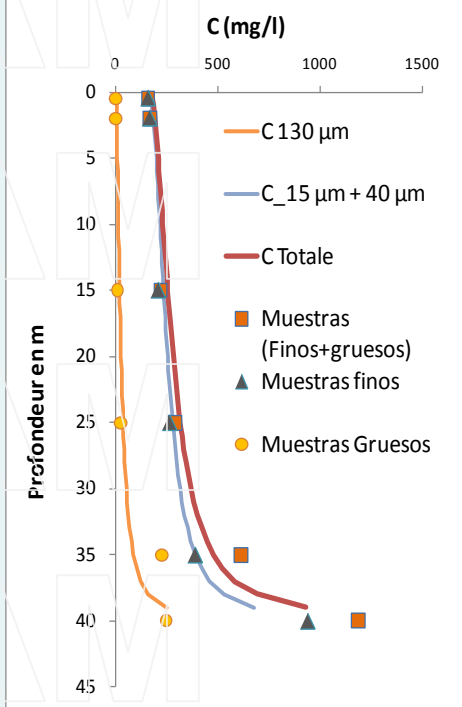
Obidos 23/02/2011  
Verticale 2



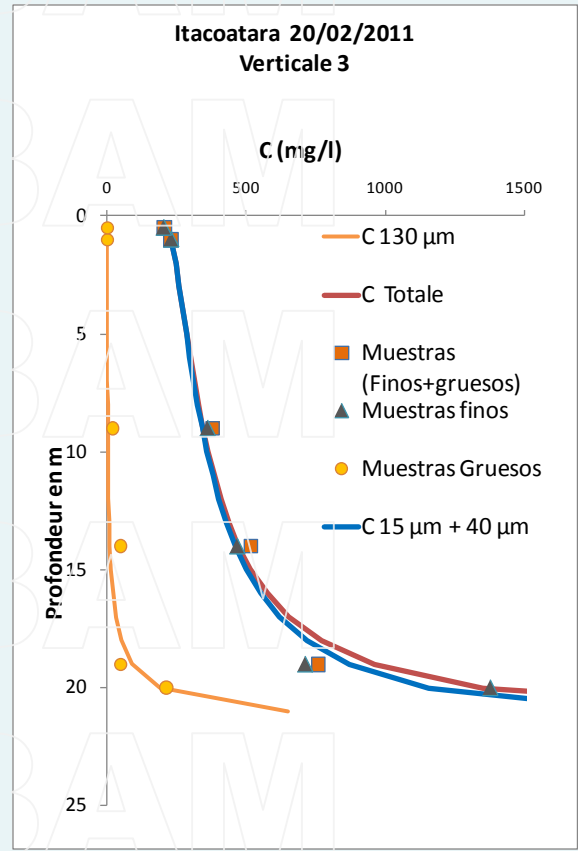
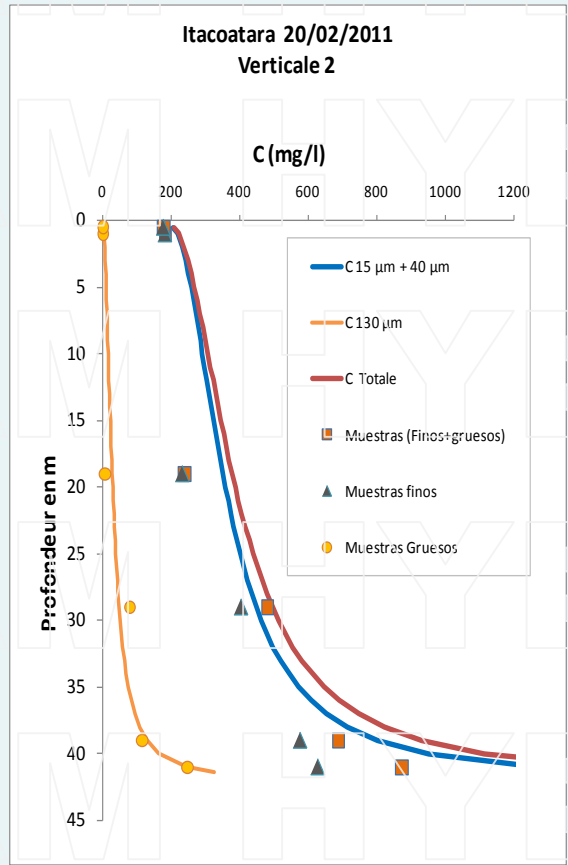
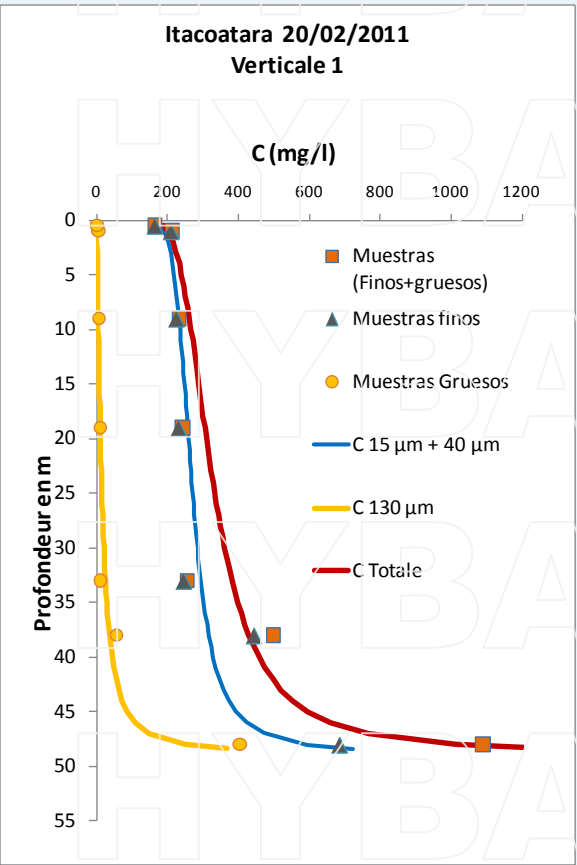
Obidos 23/02/2011  
Verticale 3



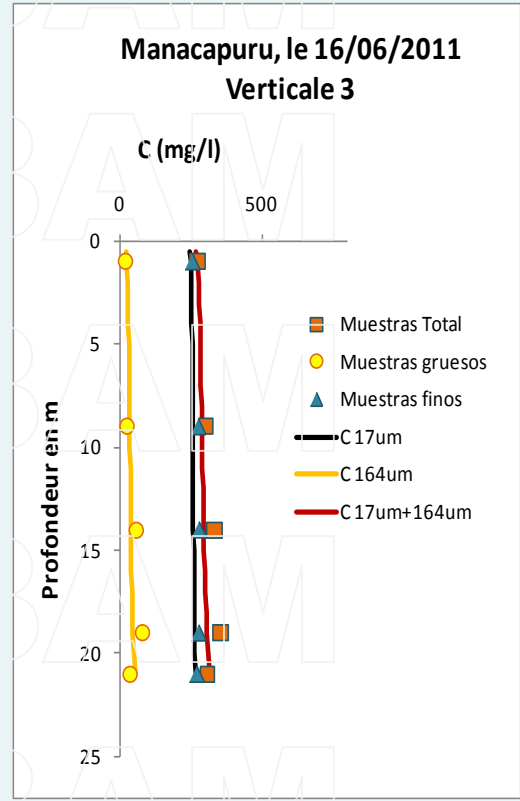
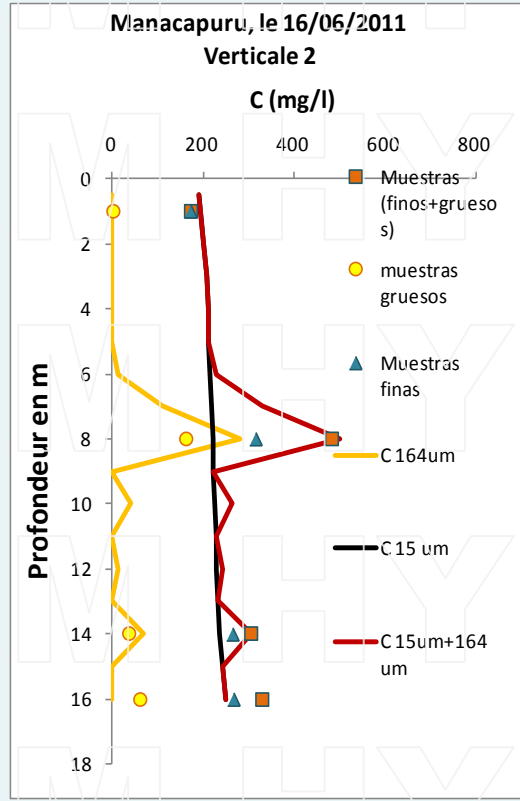
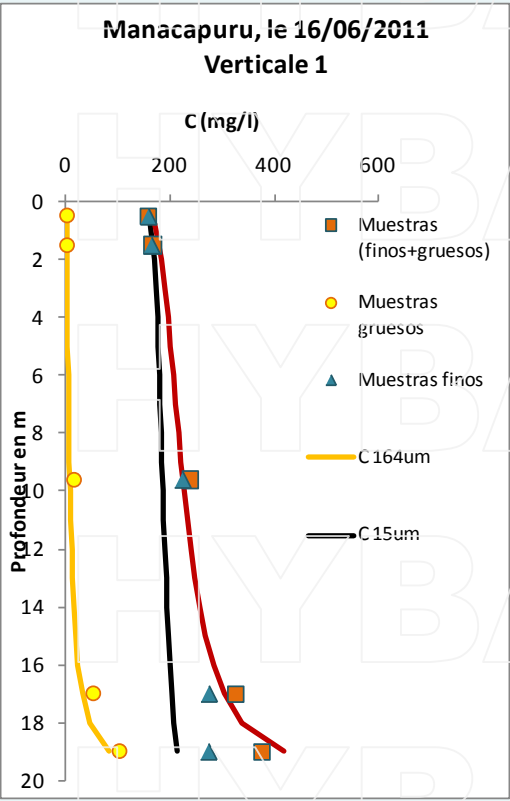
Obidos 23/02/2011  
Verticale 4



# Profils de concentration à Itacoatiara (20/ 02/ 2011)



# Profils de concentration à Manacapuru (20/ 02/ 2011)







# Synthèse des paramètres de Rouse par granulométrie

LVDAM LVDAM

•  $10 \mu\text{m} < \Phi < 15 \mu\text{m}$        $\longrightarrow$        $0,028 < \mathbf{A} < 0,05$   
 $210 \text{ mg/l} < \mathbf{C}_{\text{ref}} < 700 \text{ mg/l}$

•  $40 \mu\text{m} < \Phi < 55 \mu\text{m}$        $\longrightarrow$        $0,5 < \mathbf{A} < 0,6$   
 $300 \text{ mg/l} < \mathbf{C}_{\text{ref}} < 3000 \text{ mg/l}$

•  $130 \mu\text{m} < \Phi < 160 \mu\text{m}$        $\longrightarrow$        $0,1 < \mathbf{A} < 0,85$   
 $300 \text{ mg/l} < \mathbf{C}_{\text{ref}} < 2500 \text{ mg/l}$

# Calcul des débits solides...

HYDAM HYDAM

## Caudales solidos calculado con valores des muestras (HidroMesad)

ESTACION	RIO	FECHA	Q	Qs_finos	Qs_gruesos	Qs_total
			(m <sup>3</sup> /s)	*10 <sup>5</sup> (t/d)	*10 <sup>5</sup> (t/d)	*10 <sup>5</sup> (t/d)
Manacapuru	Solimões	16/02/2011	84 639	19	9	28
Manacapuru	Solimões	17/02/2011	81 651	20	7	26
Foz de Madeira	Madeira	19/02/2011	39 349	<b>27</b>	<b>10</b>	<b>37</b>
Itacoatiara	Amazonas	20/02/2011	149 256	<b>57</b>	<b>13</b>	<b>70</b>
Obidos	Amazonas	23/02/2011	161 308	<b>36</b>	<b>8</b>	<b>45</b>

## Caudales solidos calculado con perfiles de Rouse (HidroMesad)

ESTACION	RIO	FECHA	Q	Qs_finos	Qs_gruesos	Qs_total
			(m <sup>3</sup> /s)	*10 <sup>5</sup> (t/d)	*10 <sup>5</sup> (t/d)	*10 <sup>5</sup> (t/d)
Manacapuru	Solimões	16/02/2011	84 639			
Manacapuru	Solimões	17/02/2011	81 651			
Foz de Madeira	Madeira	19/02/2011	39 349	<b>27</b>	<b>8</b>	<b>35</b>
Itacoatiara	Amazonas	20/02/2011	149 256	<b>67</b>	<b>12</b>	<b>80</b>
Obidos	Amazonas	23/02/2011	161 308	<b>32</b>	<b>7</b>	<b>39</b>