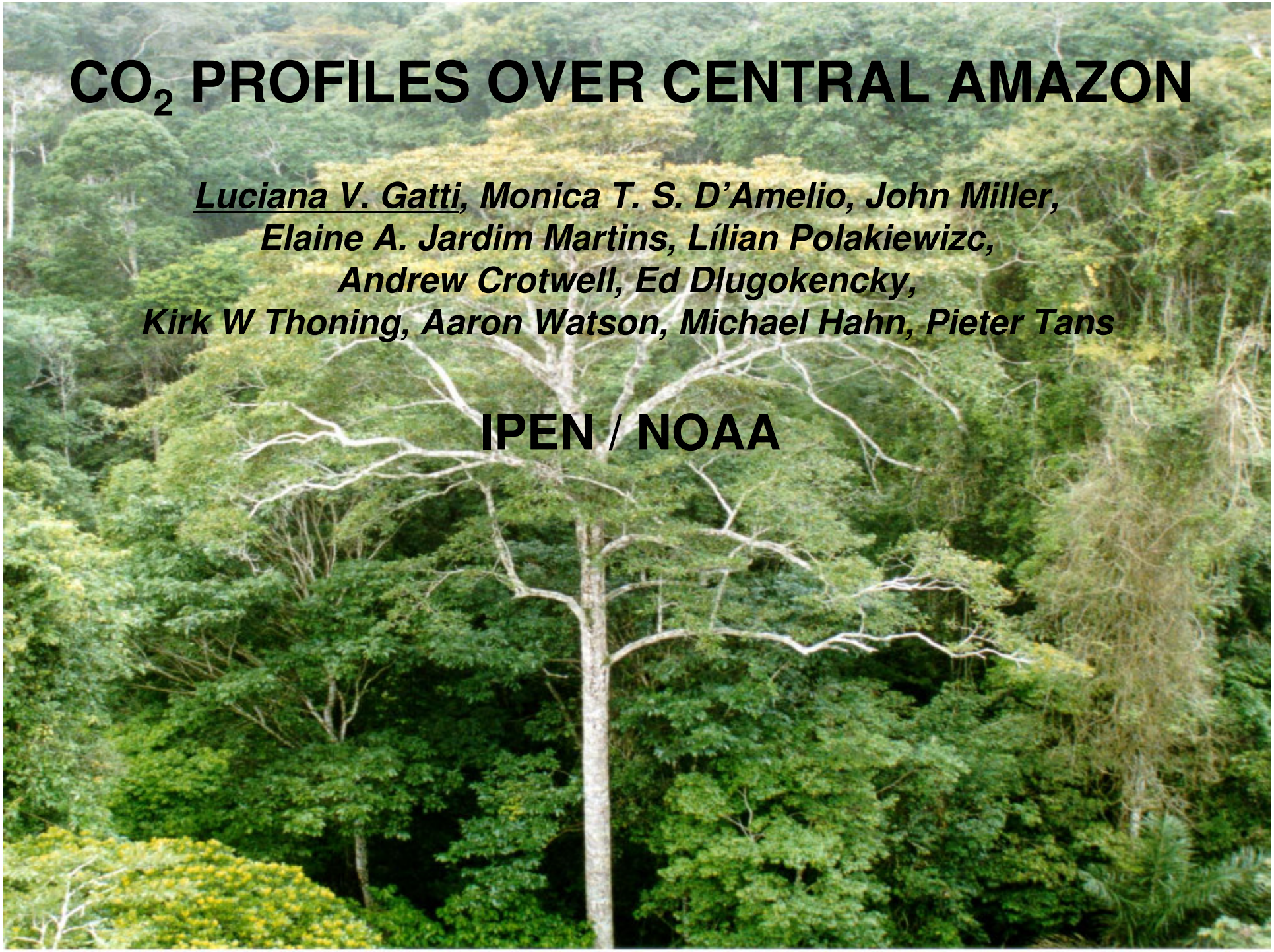


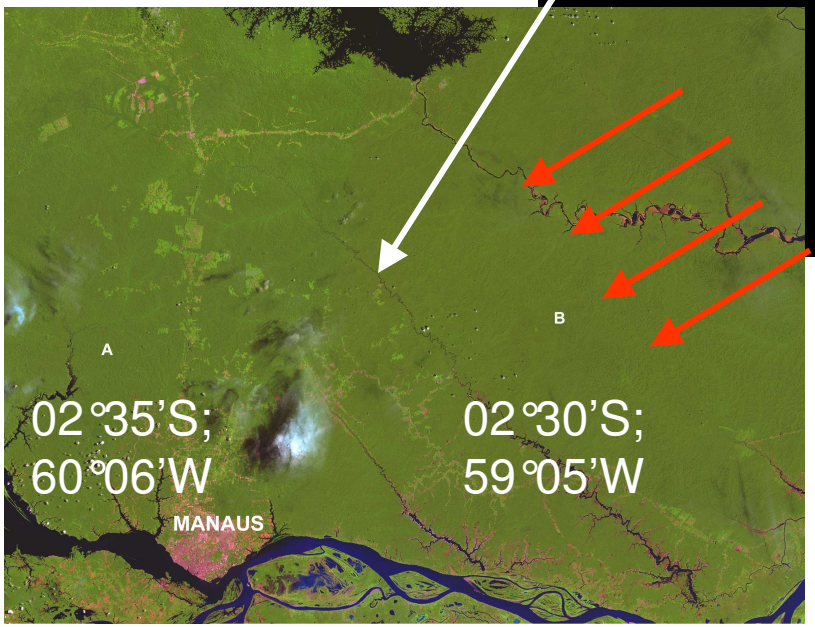
# $CO_2$ PROFILES OVER CENTRAL AMAZON


***Luciana V. Gatti, Monica T. S. D'Amelio, John Miller, Elaine A. Jardim Martins, Lílian Polakiewizc, Andrew Crotwell, Ed Dlugokencky, Kirk W Thoning, Aaron Watson, Michael Hahn, Pieter Tans***

**IPEN / NOAA**

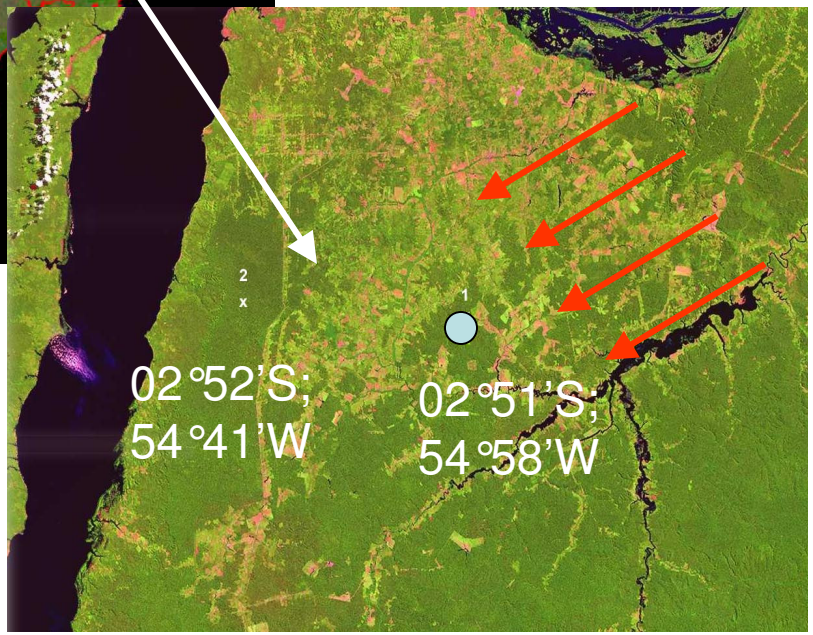
start December 2004

AMAZONAS



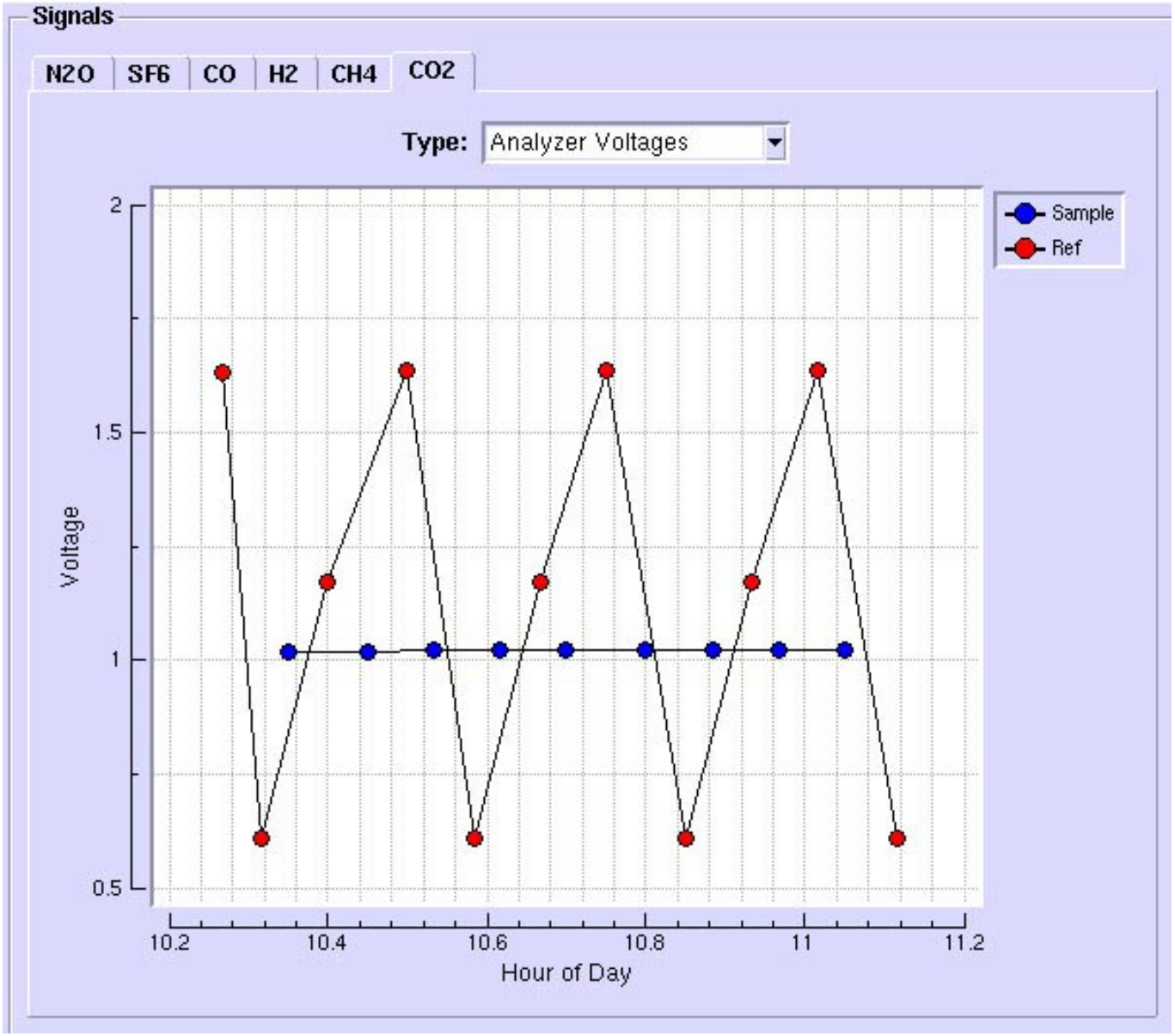

start December 2000

PARÁ



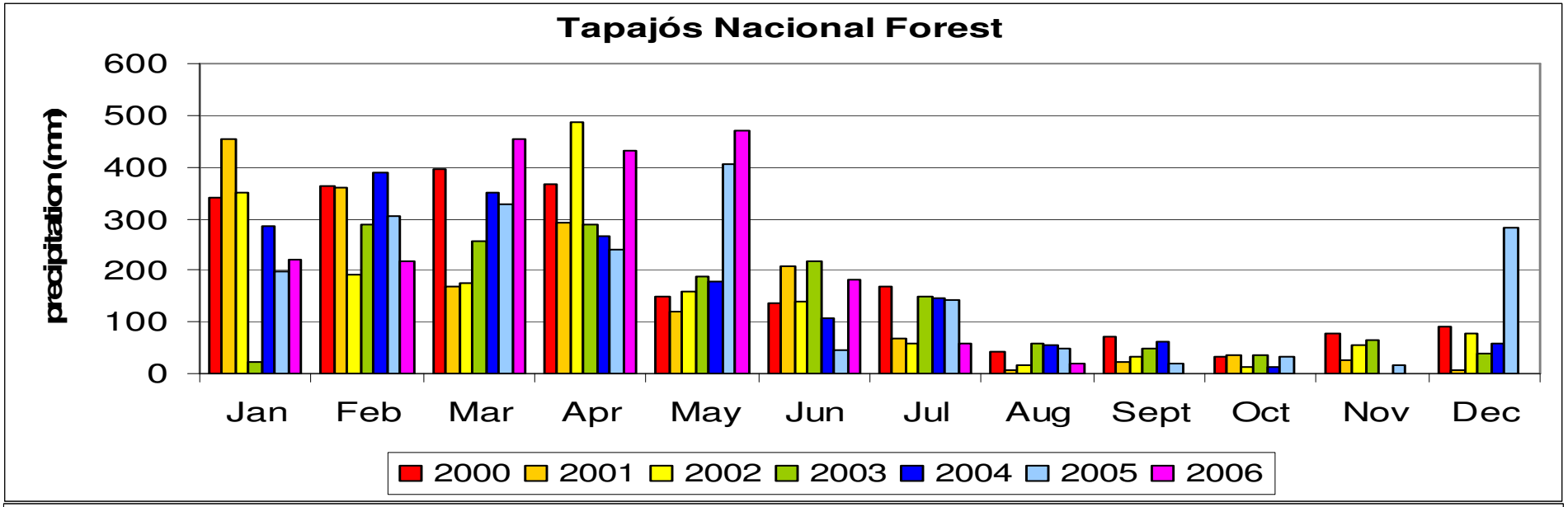
# Portable Flask Package (PFP)

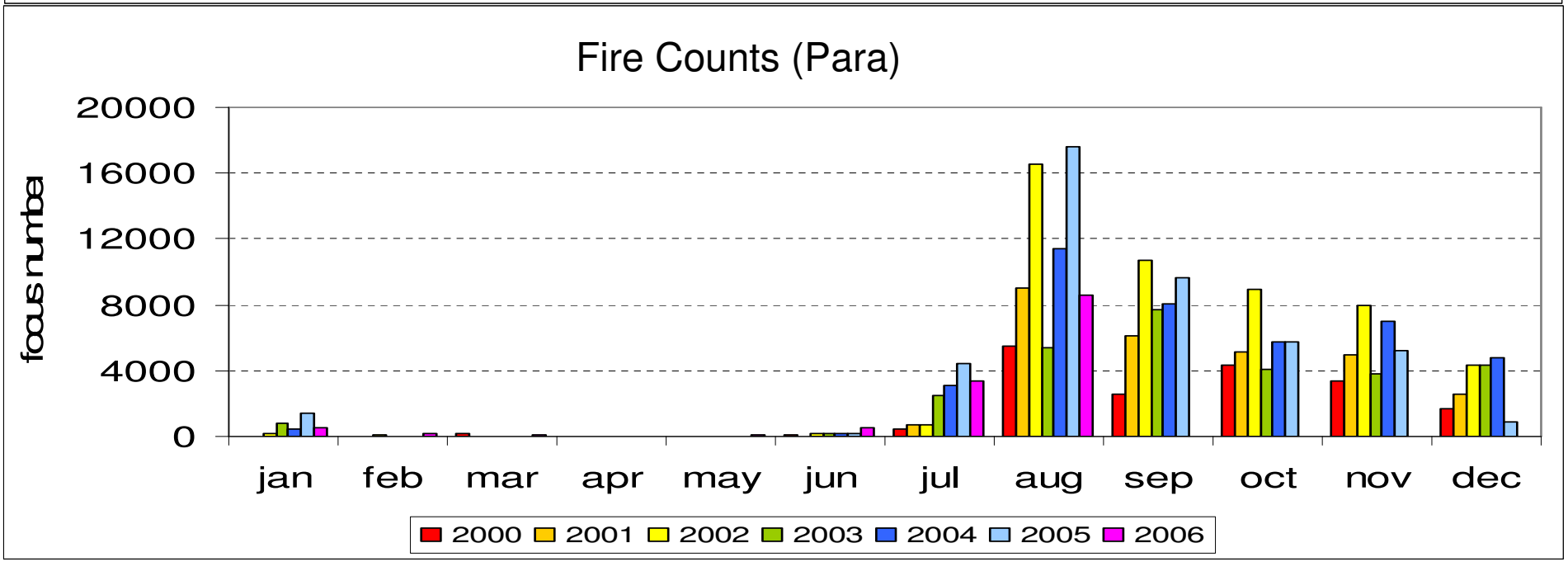
# Field sampling - Small Aircraft

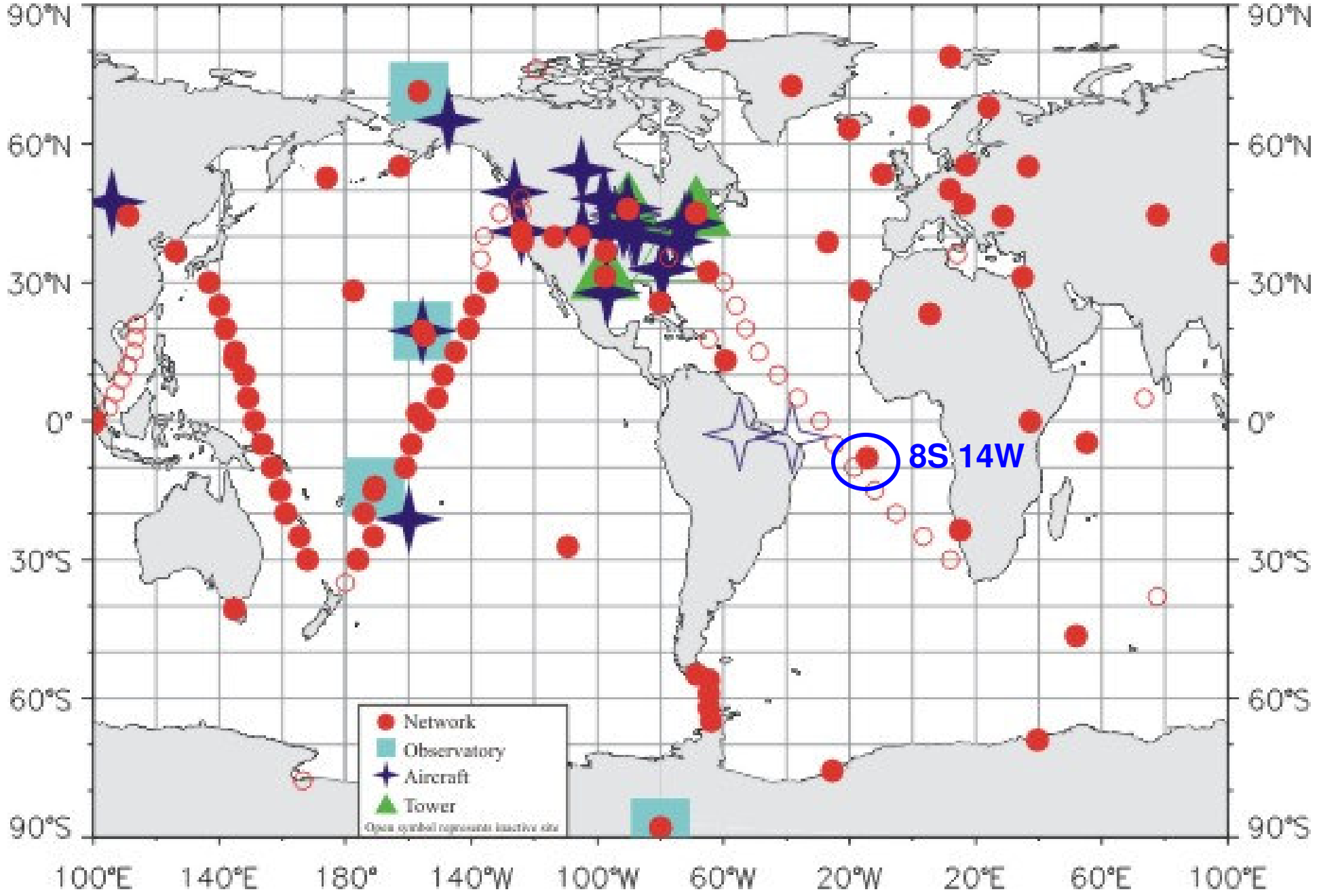


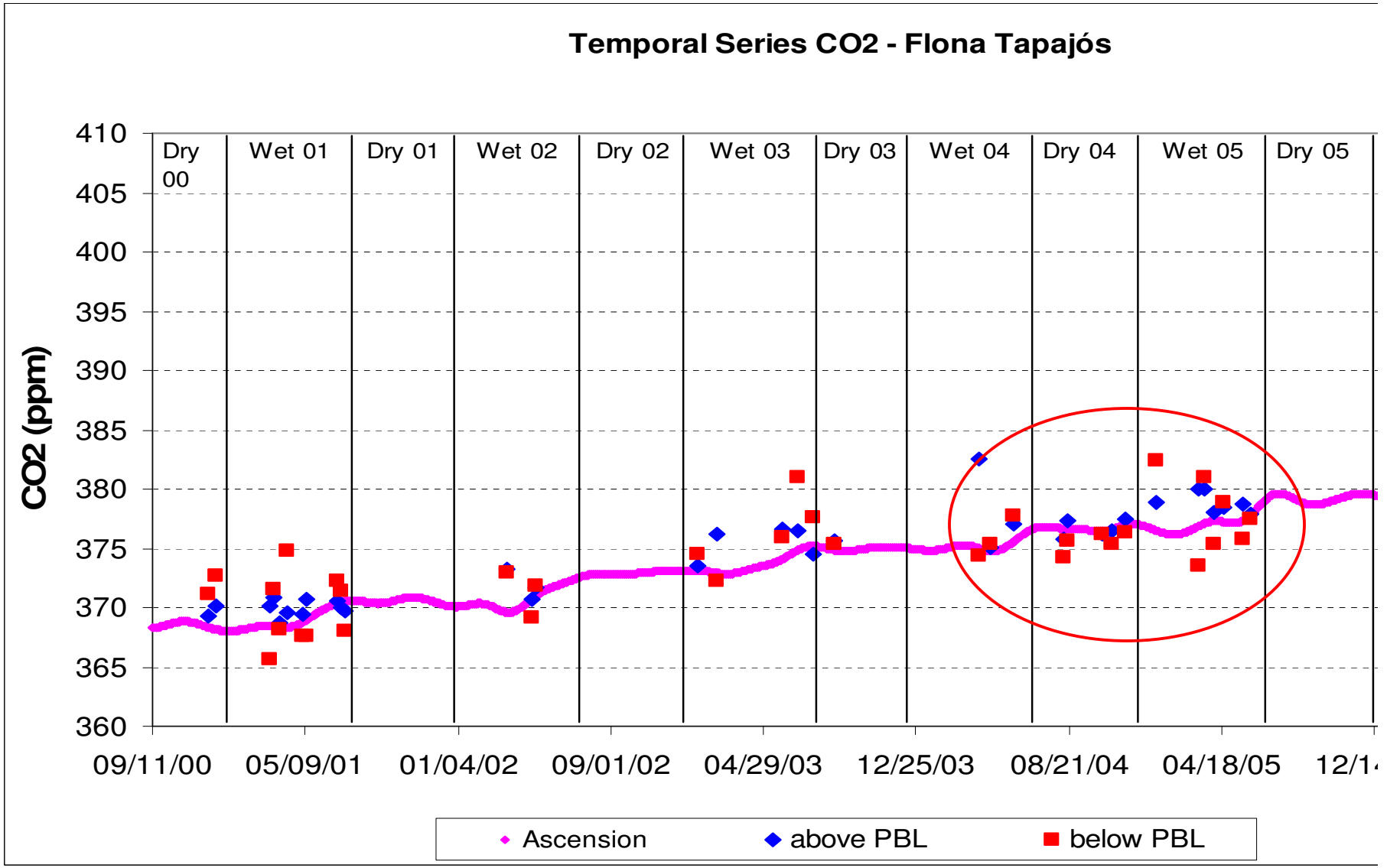

3 reference standards Low, medium and high precision: 0.03ppm, stability: 0.02%

# Dry and Wet Classification Flona Tapajós

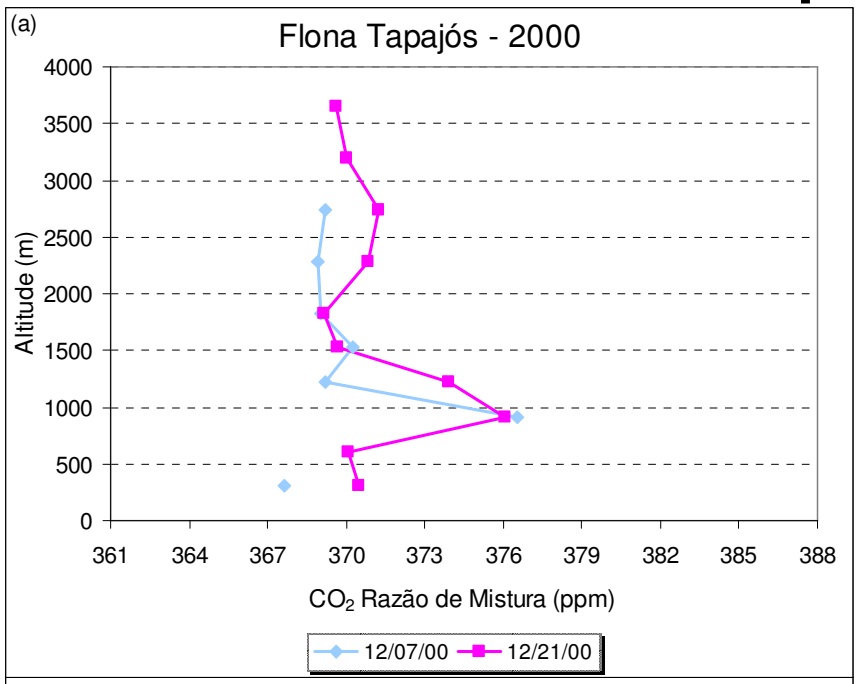


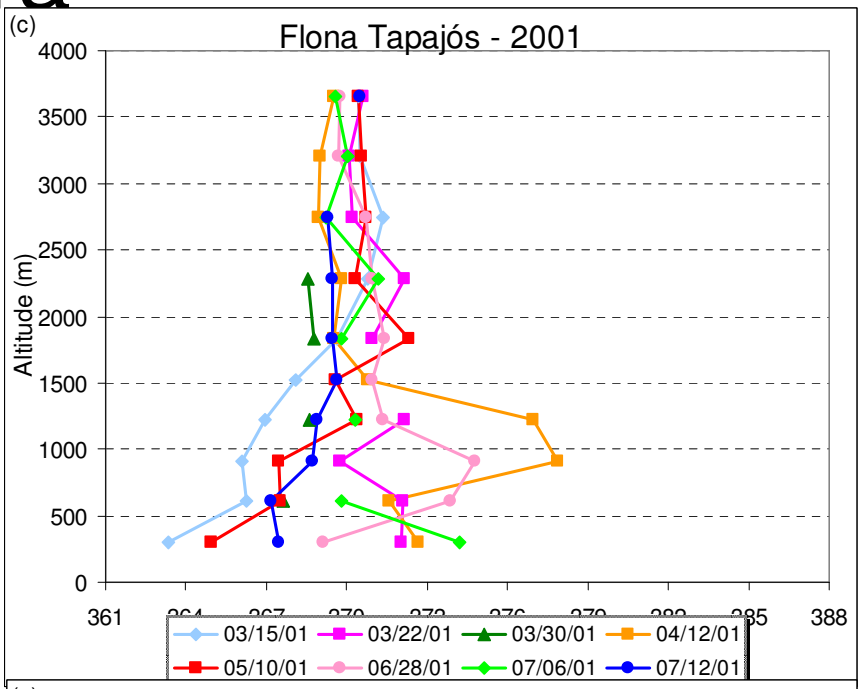



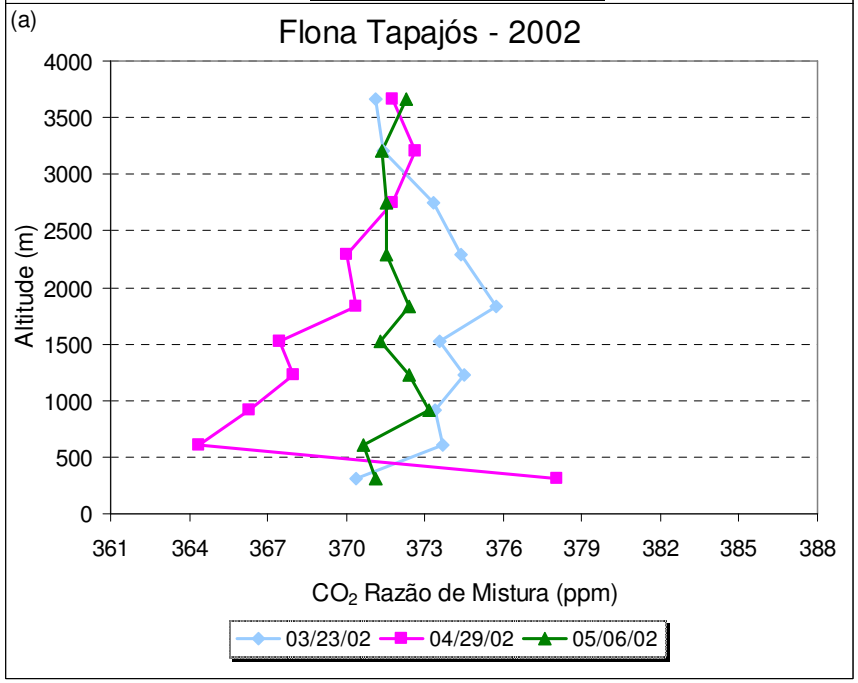

90°N
60°N
30°N
0°
30°S
60°S
90°S
100°E
140°E
180°
140°W
100°W
60°W
20°W
20°E
60°E
100°E
8S 14W
Network
Observatory
Aircraft
Tower

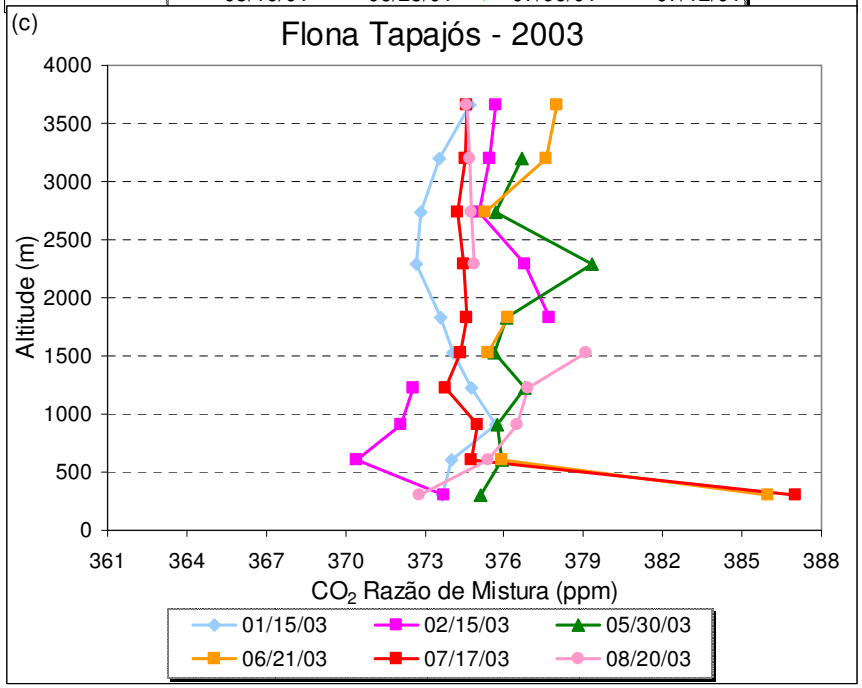

Temporal Series CO2 - Flona Tapajós
CO2 (ppm)
410
405
400
395
390
385
380
375
370
365
360
Dry 00
Wet 01
Dry 01
Wet 02
Dry 02
Wet 03
Dry 03
Wet 04
Dry 04
Wet 05
Dry 05
09/11/00
05/09/01
01/04/02
09/01/02
04/29/03
12/25/03
08/21/04
04/18/05
Ascension
above PBL
below PBL

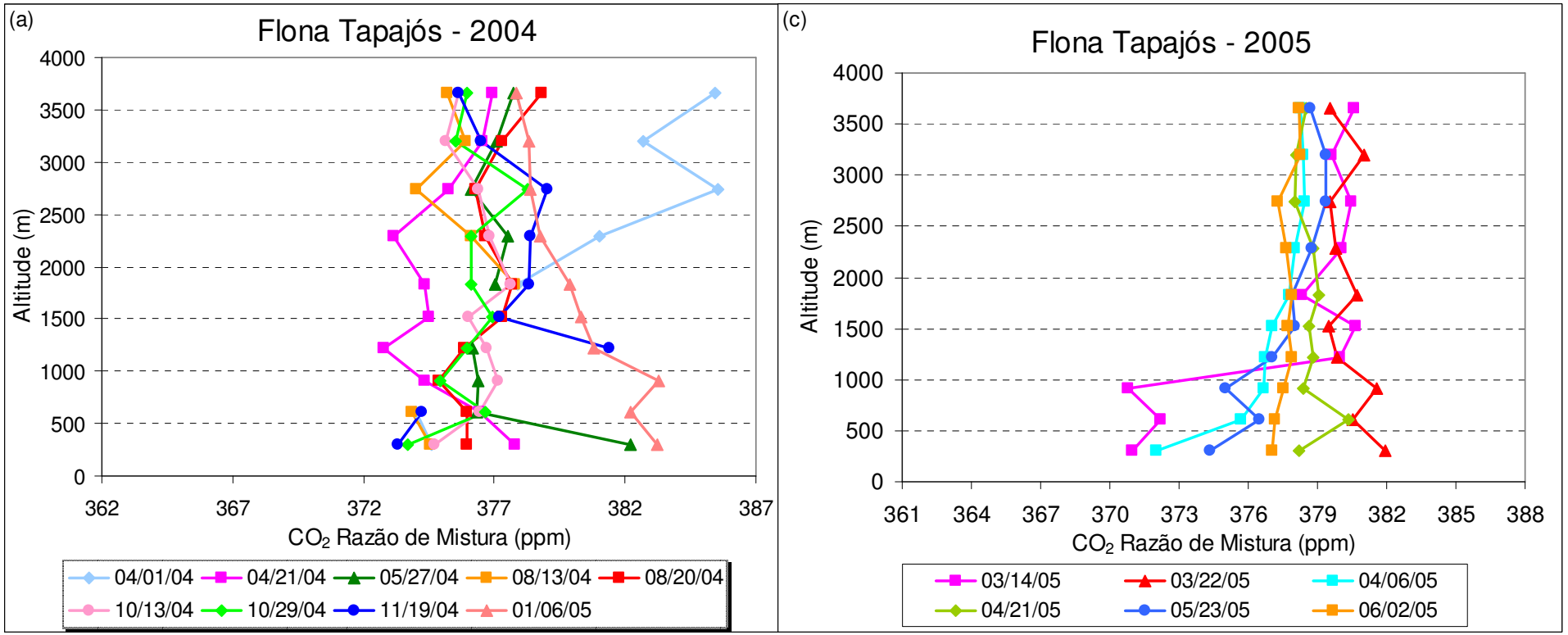
# Pará


(a)
Flona Tapajós - 2000
Altitude (m)
0
500
1000
1500
2000
2500
3000
3500
4000
361
364
367
370
373
376
379
382
385
388
CO2 Razão de Mistura (ppm)
12/07/00
12/21/00

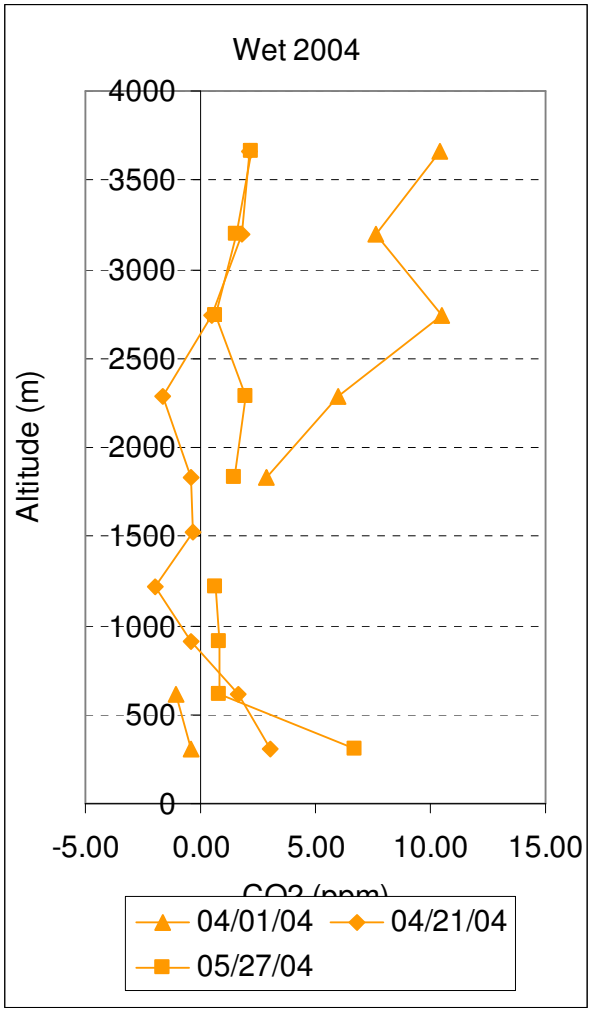

(c)
Flona Tapajós - 2001
Altitude (m)
0
500
1000
1500
2000
2500
3000
3500
4000
361
388
03/15/01
03/22/01
03/30/01
04/12/01
05/10/01
06/28/01
07/06/01
07/12/01

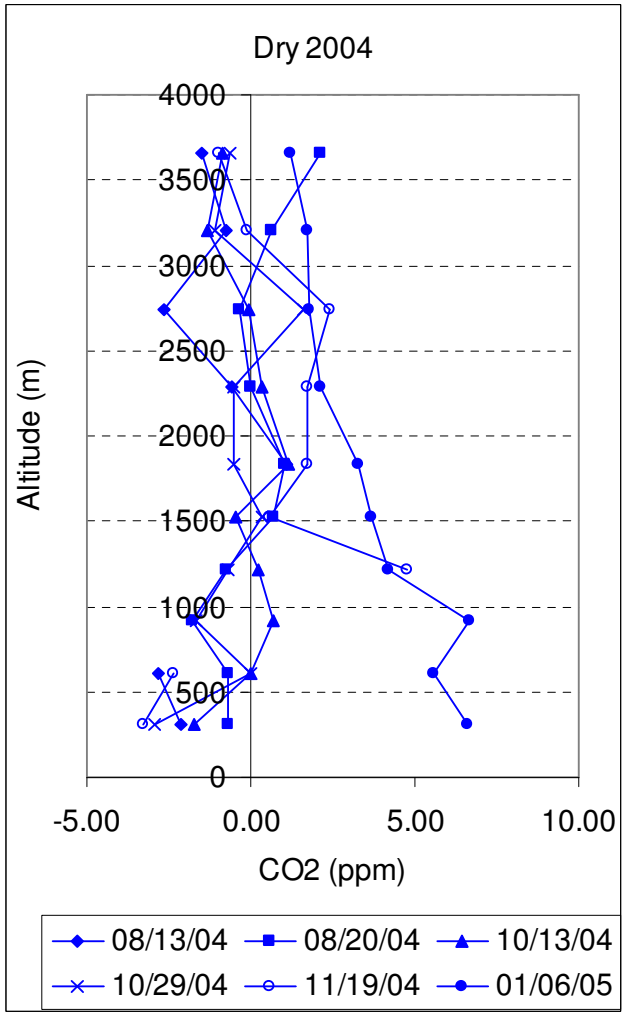

(a)
Flona Tapajós - 2002
Altitude (m)
0
500
1000
1500
2000
2500
3000
3500
4000
361
364
367
370
373
376
379
382
385
388
CO2 Razão de Mistura (ppm)
03/23/02
04/29/02
05/06/02

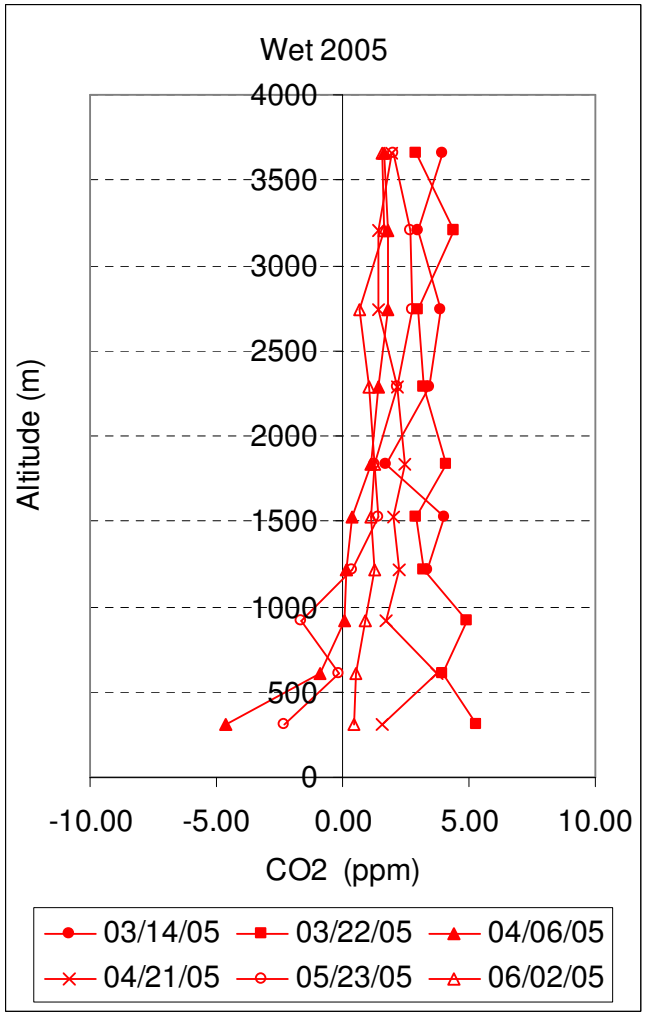

(c)
Flona Tapajós - 2003
Altitude (m)
0
500
1000
1500
2000
2500
3000
3500
4000
361
364
367
370
373
376
379
382
385
388
CO2 Razão de Mistura (ppm)
01/15/03
02/15/03
05/30/03
06/21/03
07/17/03
08/20/03


(a)
Flona Tapajós - 2004
Altitude (m)
4000
3500
3000
2500
2000
1500
1000
500
0
362
367
372
377
382
387
CO2 Razão de Mistura (ppm)
04/01/04
04/21/04
05/27/04
08/13/04
08/20/04
10/13/04
10/29/04
11/19/04
01/06/05
(c)
Flona Tapajós - 2005
Altitude (m)
4000
3500
3000
2500
2000
1500
1000
500
0
361
364
367
370
373
376
379
382
385
388
CO2 Razão de Mistura (ppm)
03/14/05
03/22/05
04/06/05
04/21/05
05/23/05
06/02/05

# Flona Tapajos minus Ascension

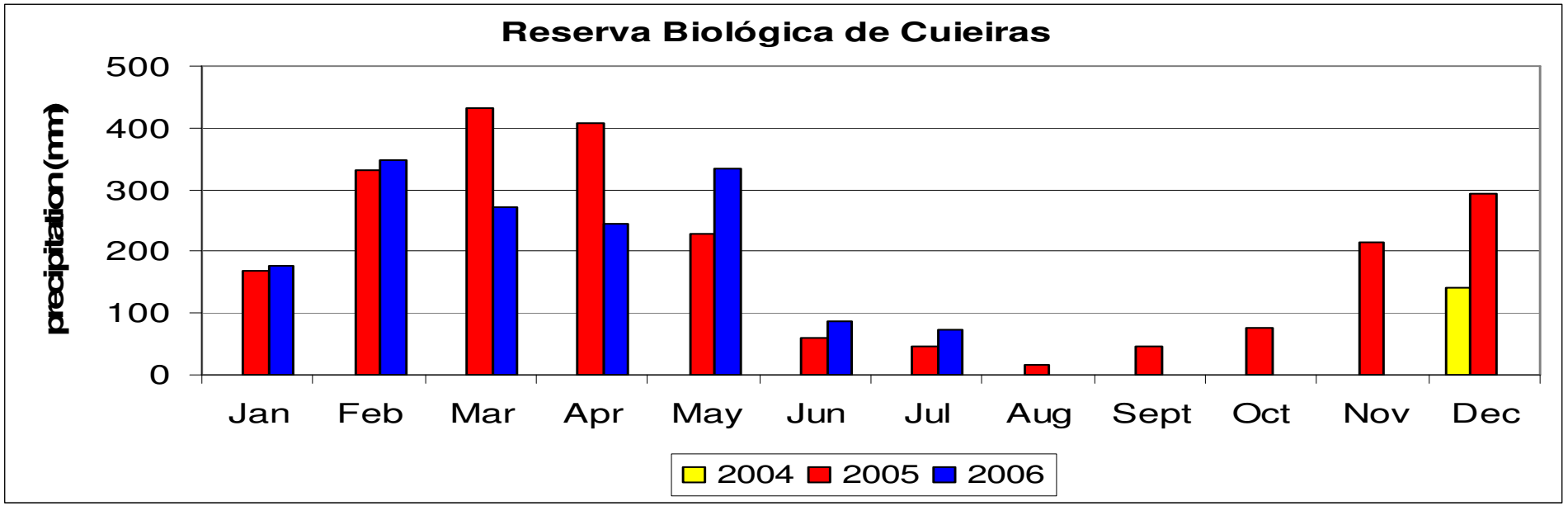


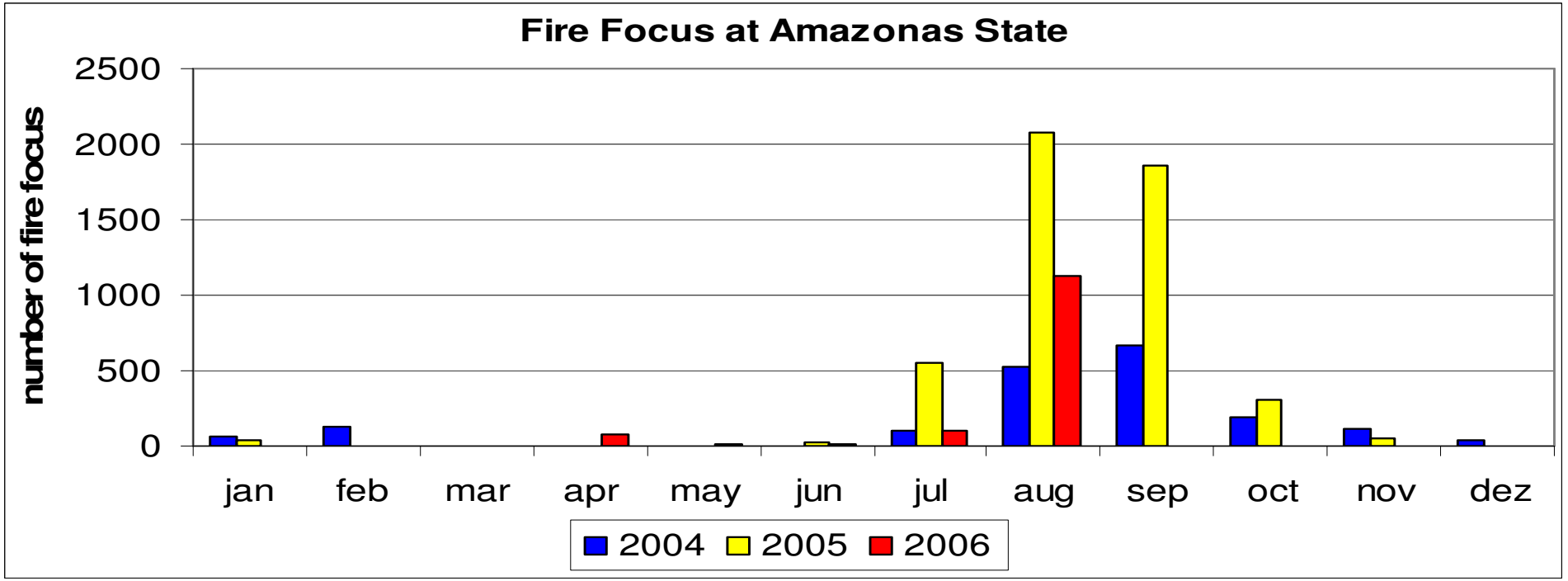



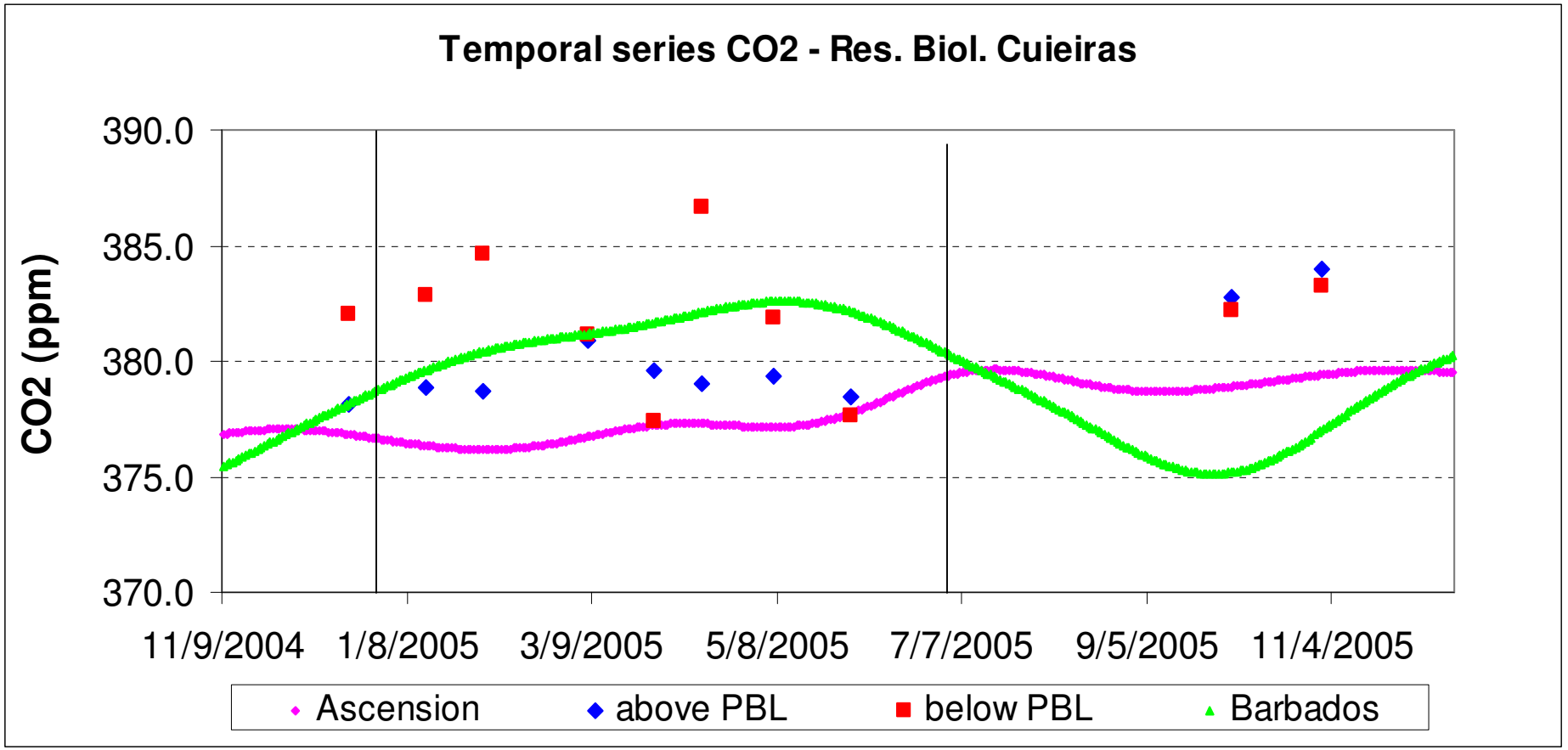



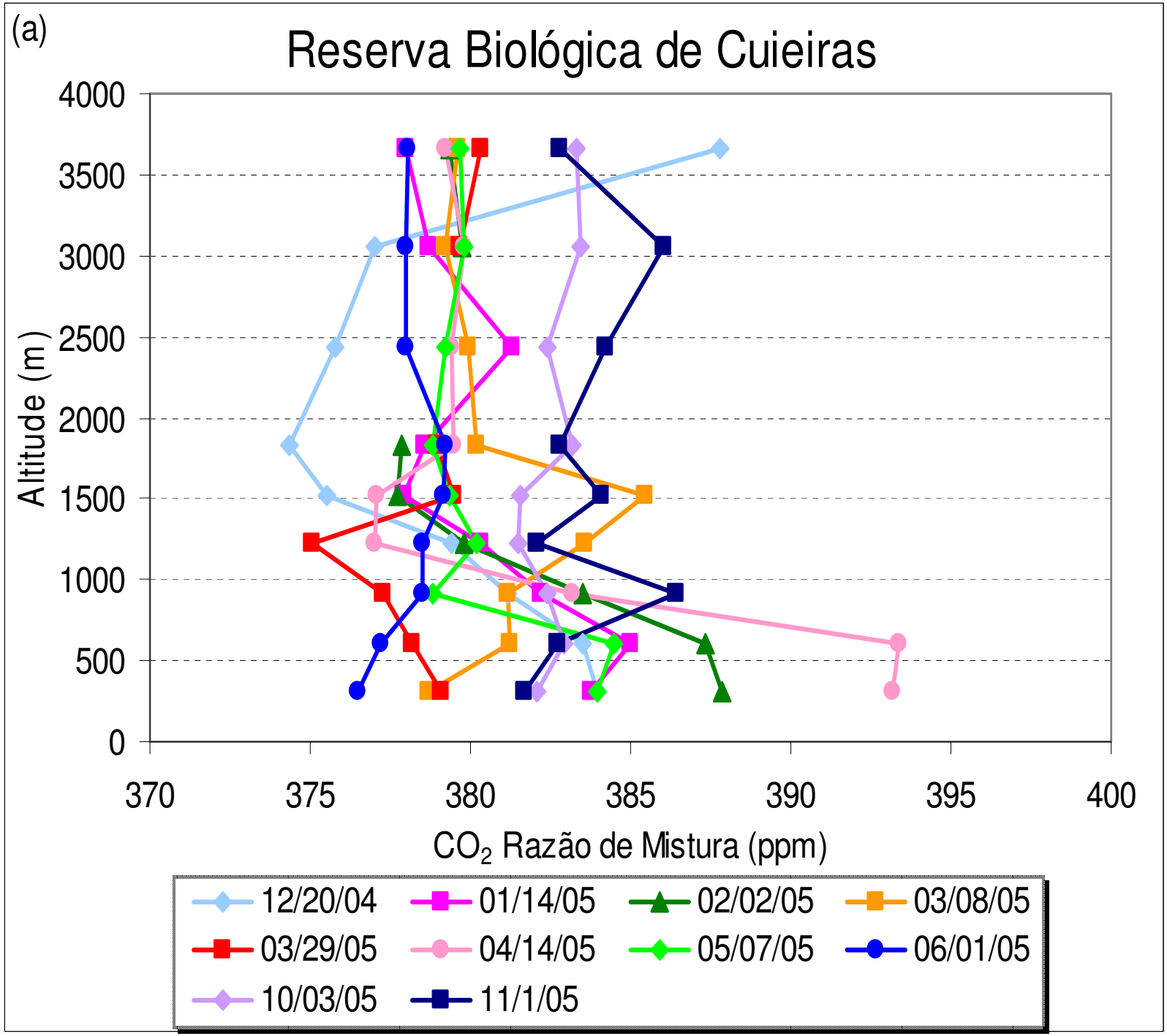
# AMAZONAS

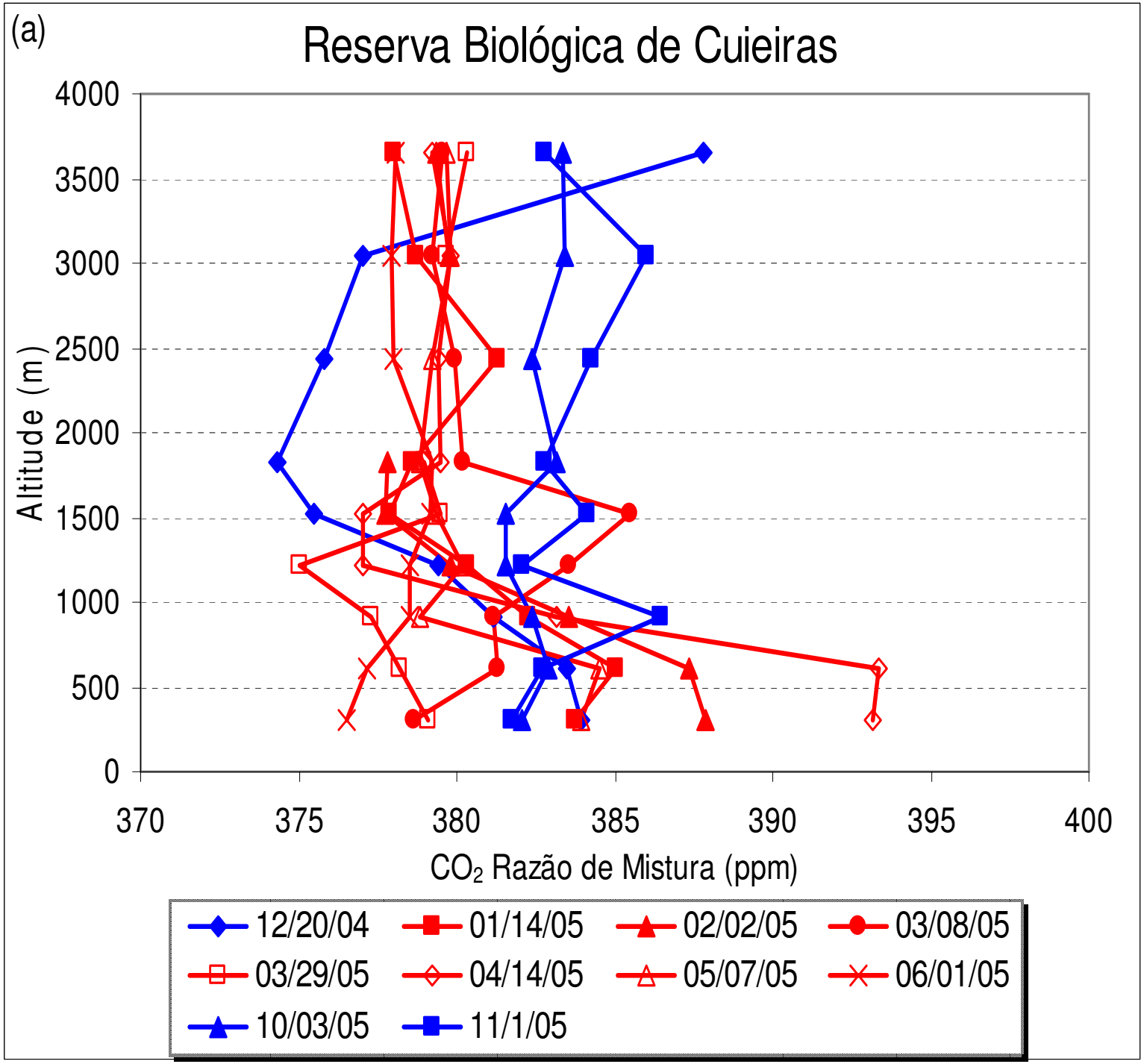
# Dry and Wet Classification Reserva Biologica de Cuieiras



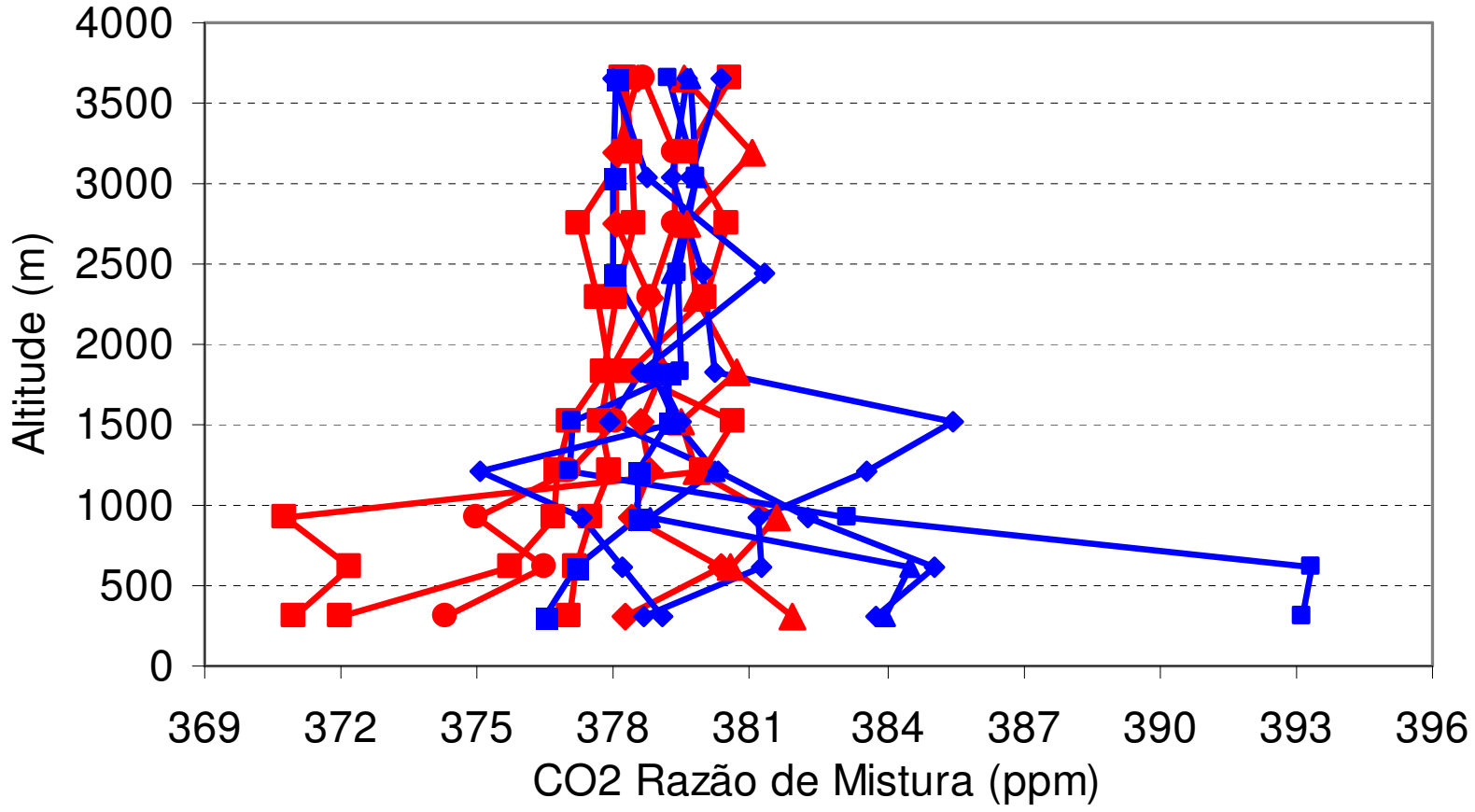




Temporal series CO2 - Res. Biol. Cuieiras
CO2 (ppm)
390.0
385.0
380.0
375.0
370.0
11/9/2004
1/8/2005
3/9/2005
5/8/2005
7/7/2005
9/5/2005
11/4/2005
Ascension
above PBL
below PBL
Barbados


(a)
Reserva Biológica de Cuieiras
Altitude (m)
4000
3500
3000
2500
2000
1500
1000
500
0
370
375
380
385
390
395
400
CO2 Razão de Mistura (ppm)
12/20/04
01/14/05
02/02/05
03/08/05
03/29/05
04/14/05
05/07/05
06/01/05
10/03/05
11/1/05


(a)
Reserva Biológica de Cuieiras
Altitude (m)
4000
3500
3000
2500
2000
1500
1000
500
0
370
375
380
385
390
395
400
CO2 Razão de Mistura (ppm)
12/20/04
01/14/05
02/02/05
03/08/05
03/29/05
04/14/05
05/07/05
06/01/05
10/03/05
11/1/05

# Flona Tapajós and Cuieiras - Wet 2005




03/14/05 03/22/05 04/06/05 04/21/05
05/23/05 06/02/05 01/14/05 03/08/05
03/29/05 04/14/05 05/07/05 06/01/05

# Conclusions

- FNT(Pará) and Cuieiras(Am) show below-PLB significant $CO_2$ variations → Regional influence
- FNT indicates sink during wet and dry seasons
  - Wet season shows higher concentration than dry.
- Cuieiras shows higher concentrations than FNT below PBL (wet season)
- Cuieiras indicates source during wet season