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zsharie@yahoo.com

// : // :

CO

CO

( )

NO<sub>x</sub>

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(1998)

Roebber

(Inoue, et al., 1986)

)

(

( )

SO<sub>2</sub>

.(Bringfelt, 1971)

.(Ccoyllo and Andrade, 2002)

O<sub>3</sub> CO, NO<sub>2</sub>

.(Tu, et al., 2007)

(Berlyand, 1991).

)

(

NOAA

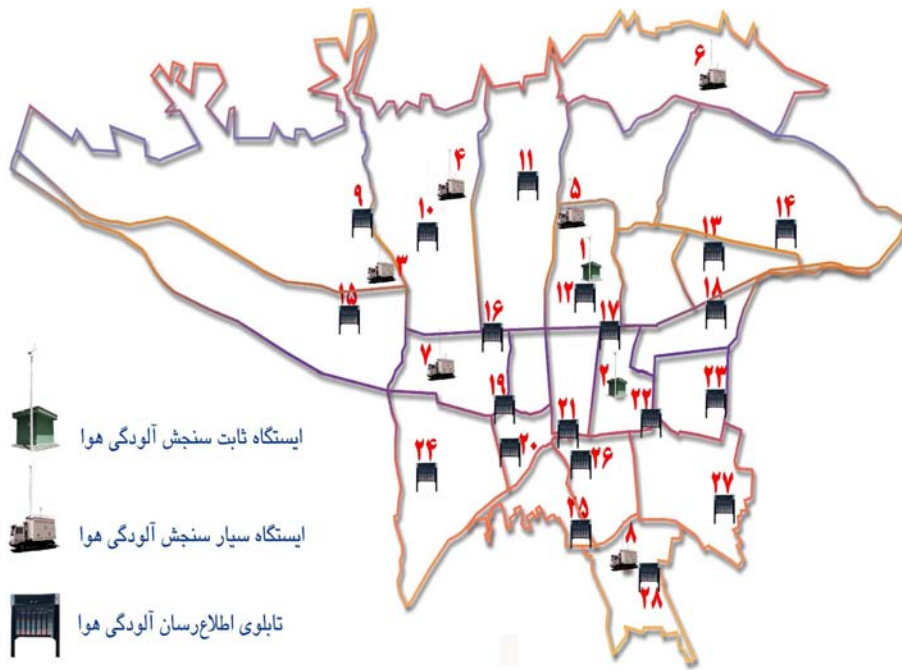
Grads

( )

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( : )

( )



( : )

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( )

PM<sub>10</sub>

PM<sub>10</sub> SO<sub>2</sub> CO

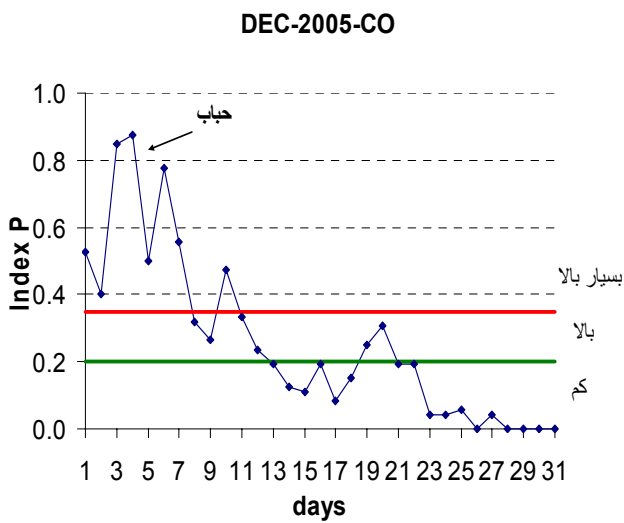
q<sub>mo</sub>/q<sub>an</sub>

PM<sub>10</sub> SO<sub>2</sub> CO

PM<sub>10</sub> CO

SO<sub>2</sub>

Groups of $q_{mo}/q_{an}$	$q_{mo}/q_{an}$ : ( )				
	$< 0.5$	$0.5-1$	$1-1.5$	$1.5-2$	$> 2$
SO <sub>2</sub>	٪۱۳	٪۴۸	٪۳۰/۴	٪۴/۳	٪۴/۳
CO	-	٪۵۲	٪۴۴	٪۴	-
PM <sub>10</sub>	-	٪۵۴	٪۴۶	-	-



SO<sub>2</sub> CO

(Berlyand, 1991)

CO P : ( )  
( / )

$$\bar{q} = 1/N \sum_{j=1}^N q_j / q_{avj} \quad (۱)$$

$q_j$  N  
 $q_{avj}$  j  
 $\bar{q}$

p  
CO  
CO

p  
(Berlyand, 1991)

(Berlyand, 1991) CO  
p

$$P = m/n \quad (۲)$$

m n

p  
(P<0.2)

( )

p

(p>0.35)

(0.2<p<0.35)

CO

p

( )

( : )

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( )

( )

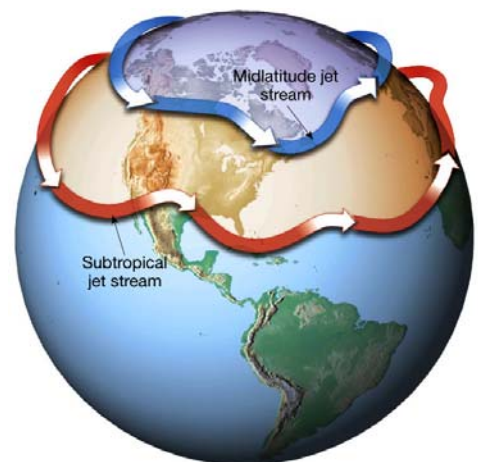
( )

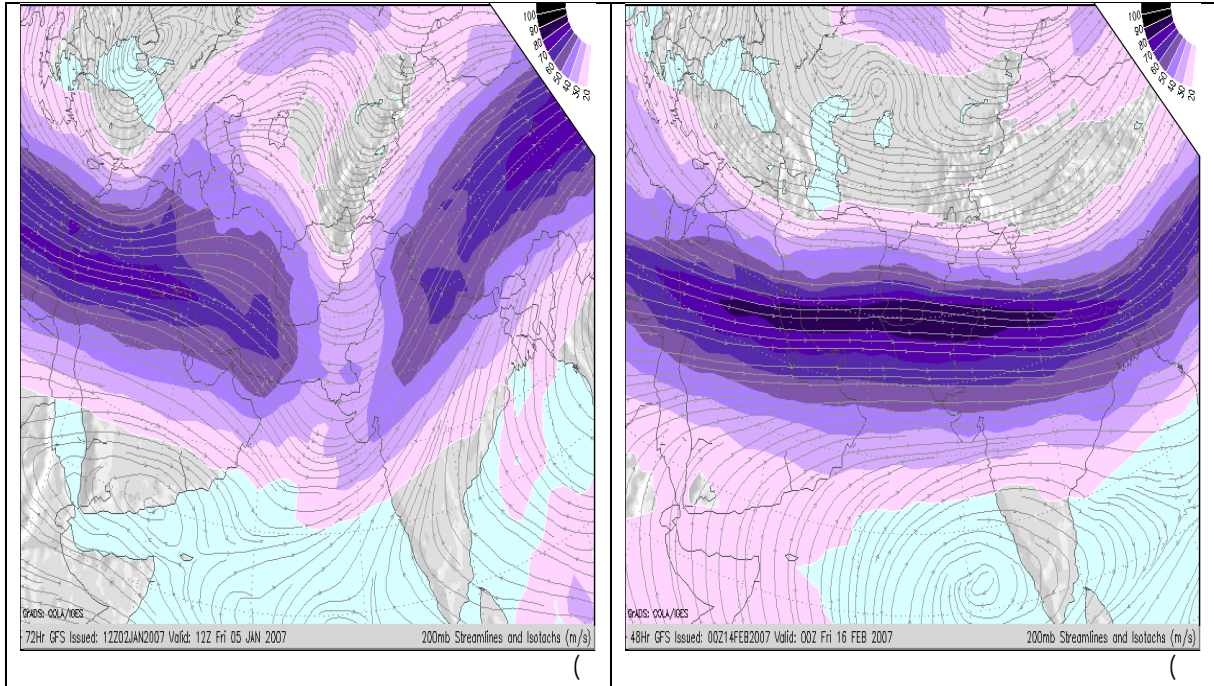
( )

( )

( )

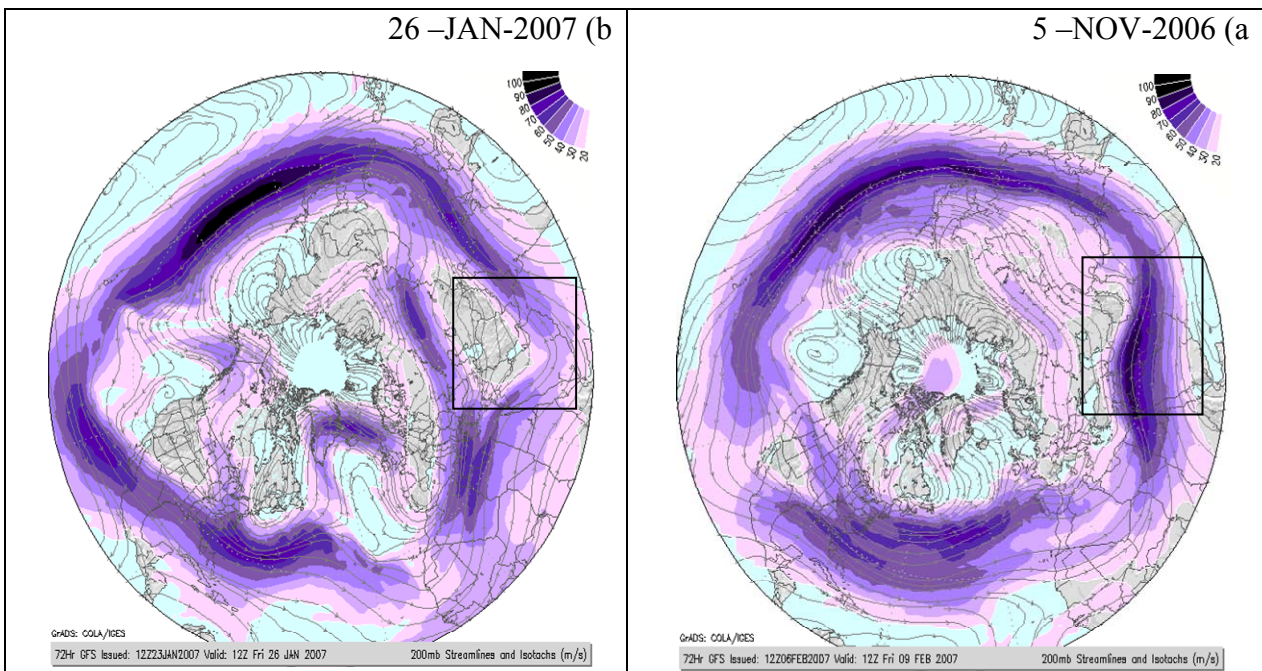
: ( )





( Grads )

( m/s )



( Grads )

( m/s )

( : )

.( \*) : ( )

$\Delta T$	$q$ $p$	( )	$p$	( )
۳/۳	$P = 0.64$	$\gamma$	*	( )
۷/۲	$q = 1.21$	$\gamma$		( )
۴	$P = 0.42$	$\varphi$		( )
۶	$P = 0.77$	$\varphi$		( )
۳/۴	$P = 0.42$	$\varphi$		( )
۲/۳	$P = 0.48$	$\gamma$		( )

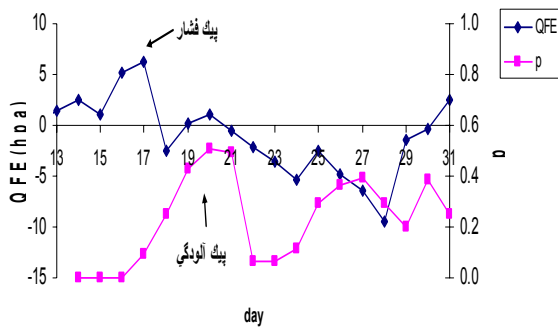
QFE<sup>5</sup>

)

( )

p

Dec-2006

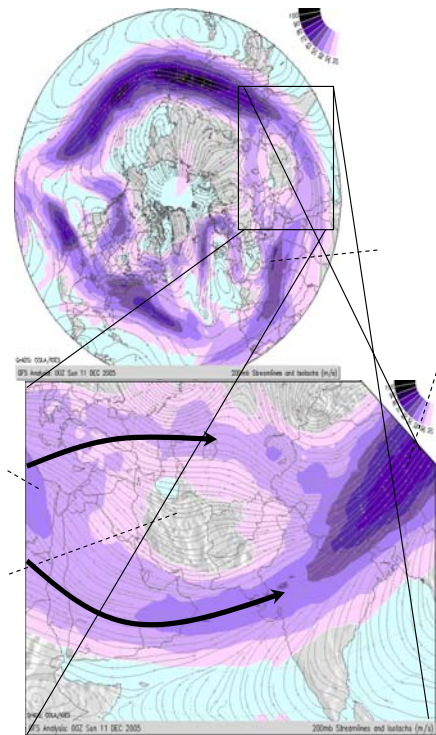


p

: ( )

QFE

( )



( )

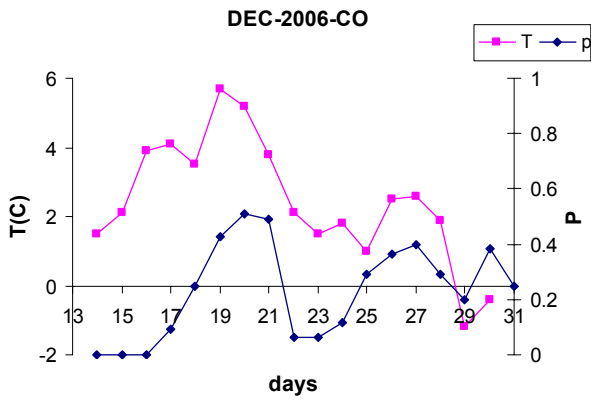
(m/s)

(Grads )

p

/

/



QFE

CO

: ( )

QFE

( )

p

R = 0.45

( )

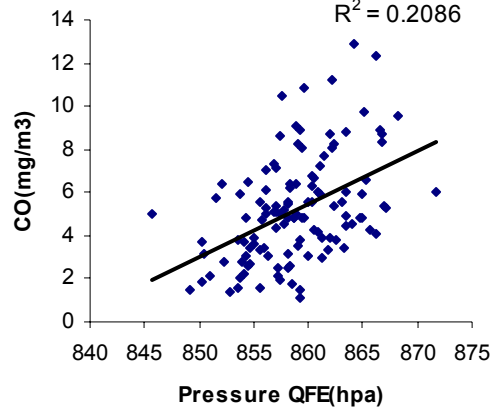
%

( )

CO-QFE-2006-2007

$$y = 0.2461x - 206.16$$

$$R^2 = 0.2086$$



CO

( )

( $\Delta T$ )

CO

: ( )

( )

( )



( : )

( )

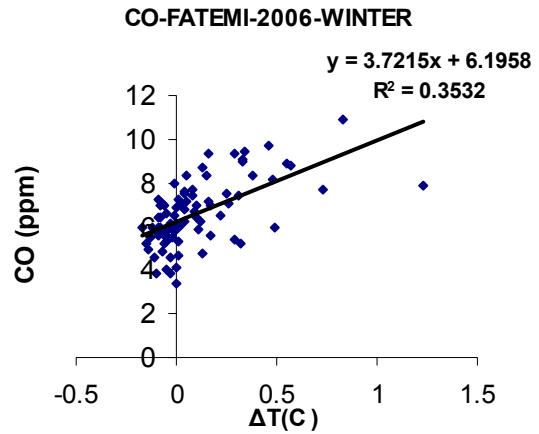
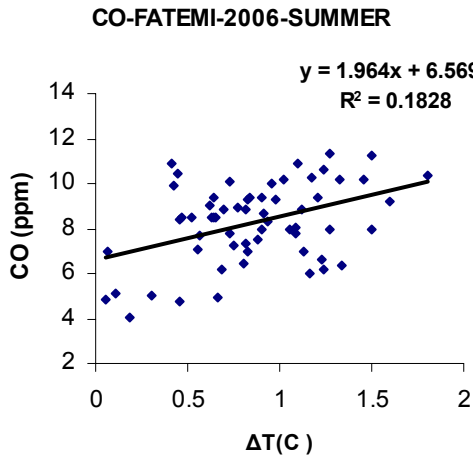
( )

/

$\Delta T$

$\Delta T$

/



(b)

(a)

CO

( : )

( )

(b)

(a)

CO

SO<sub>2</sub>

( )

( )

CO

( : )

( ( / ) )

CO

SO<sub>2</sub> (%) )

CO

SO<sub>2</sub>

SO<sub>2</sub>

/	/	/	/	(Pa/s)

( )

SO<sub>2</sub>

CO

SO<sub>2</sub>

SO<sub>2</sub>

CO

( )

(Berlyand, 1991)

( )

( )

: (Stull, 1988)

SO<sub>2</sub>

$$dh/dt = (2cu_*^3) / ((g/\theta_0)\Delta\theta_0 z_i) \quad ( )$$

$$g/\theta_0 \quad u_* \quad c \approx 0.5$$

$$\Delta\theta_0 \quad z_i$$

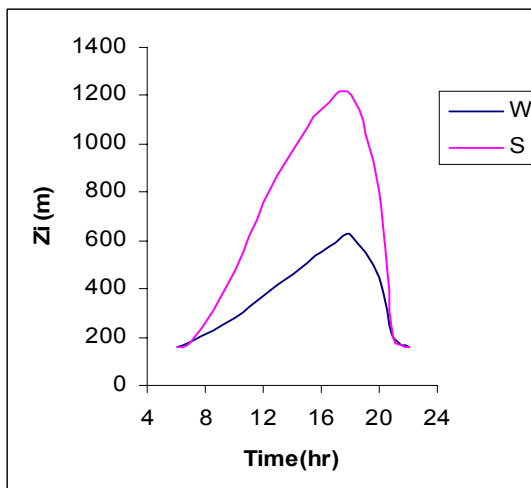
( )

$$dh/dt \approx 0.02m/s$$

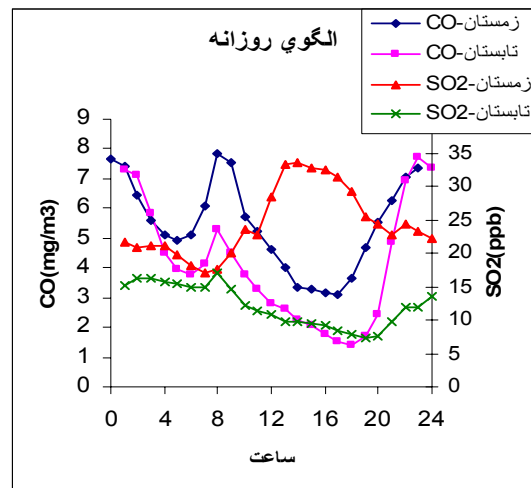
$$m/s \quad / \quad /$$

( )

(Banta, and Cotton, 1981)



(b)



(a)

SO<sub>2</sub> CO

(a)

(W) (S)

I

( )

(b)

( )

( : )

CO

CO

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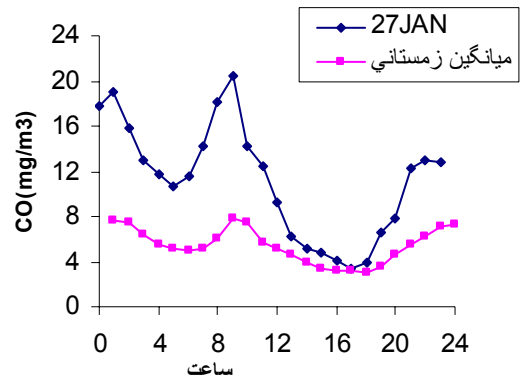
(

)

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CO

( )



CO

( )

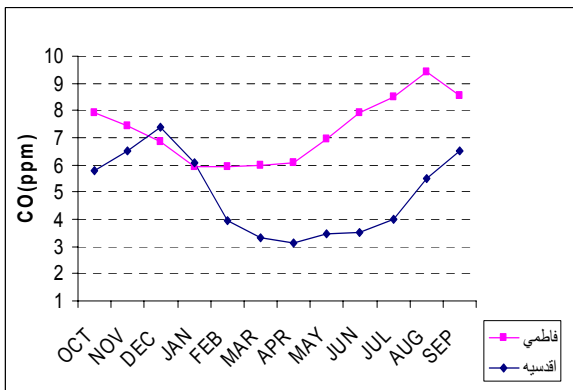
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CO

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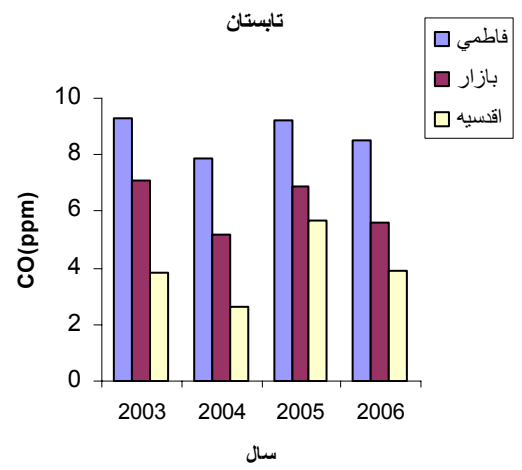
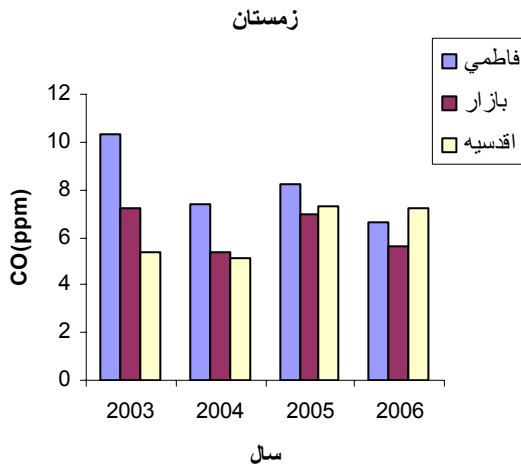


CO

( : )

( )

CO



(b)

(a)

CO

(b)

(a)

: ( )

( )

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(

p

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PM<sub>10</sub>

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CO

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CO

CO

CO

QFE

CO

CO

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- 1-Confluence
- 2-Jet streams
- 3- Blocking
- 4- Inversion
- 5-QFE :

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Grads <http://www.wxmaps.org/pix/forecasts.html>.

NOAA <http://www.cdc.noaa.gov/cdc/data.ncep.reanalysis.html>.