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jam_orak@yahoo.com :

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(Mixed distributions)

(Hidden Markov Models)

(Bayesian approach)

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(Goodness of fit)

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(Cough 2005)

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(

(Perlin 2006)

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Classical or frequentist

(Painter 2003)

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(Seasonality

Cyclic Regression

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$$(\) \mu(t) = \beta_0 + \beta_1 t + \beta_2 \cos\left(\frac{2\pi t}{a}\right) + \beta_3 \sin\left(\frac{2\pi t}{a}\right)$$

Linear trend

S_t
 Y_t

S_t

(Bilmes 2002)

Y_t

$\{S_t\}$

)

(Painter 2003)

(

$\{Y_t\}$

(Tan Say 2001)

Y_t

$\{S_t\}$

:

$\{Y_t\}$

$\{S_t\}$

$\{S_t\}$

States sequence

$\{S_t\}$

Centers for Disease Control (CDC)

Observed sequence

$\{Y_t\}$

$()^{\delta}$

$\{Y_t\} \{S_t\}$

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S_t

Y_t

$\{S_t\}$

%

$\{Y_t\}$

(CDC 2006)

:

(WHO 2004)

(π_1)

Winbugs

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<http://www.mrc-bus-cam.ac.uk/bugs>.

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$$\beta_2 \quad \beta_1 \quad \beta_0$$

$$10^{-6}$$

β_3

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Winbugs

$$\mu(t) = 3.08 - 0.01t - 1.46 \cos\left(\frac{\pi t}{6}\right) + 0.65 \sin\left(\frac{\pi t}{6}\right)$$

$$\mu(t) = 7.91 - 0.07t - 3.38 \cos\left(\frac{\pi t}{6}\right) + 1.59 \sin\left(\frac{\pi t}{6}\right)$$

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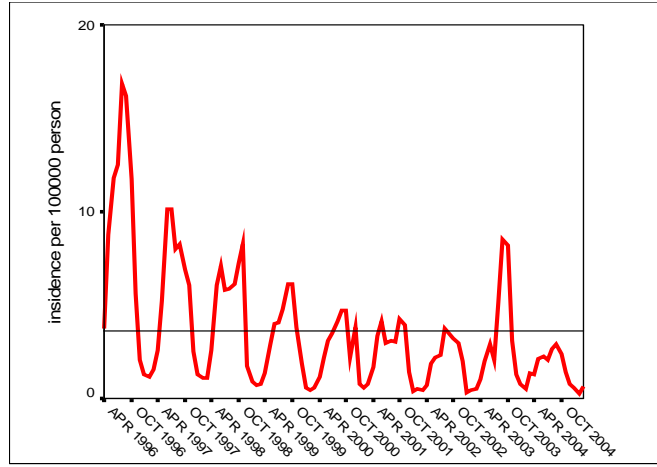
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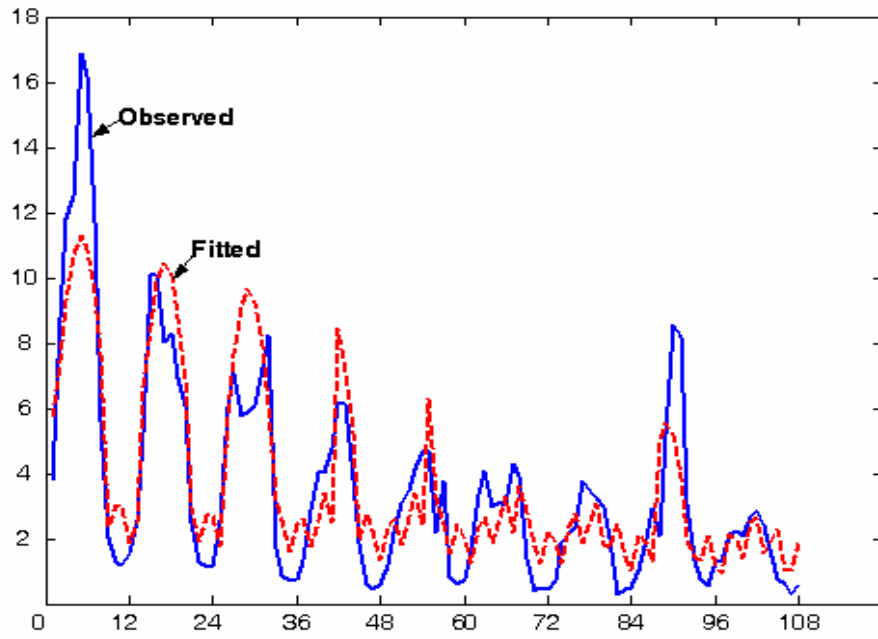
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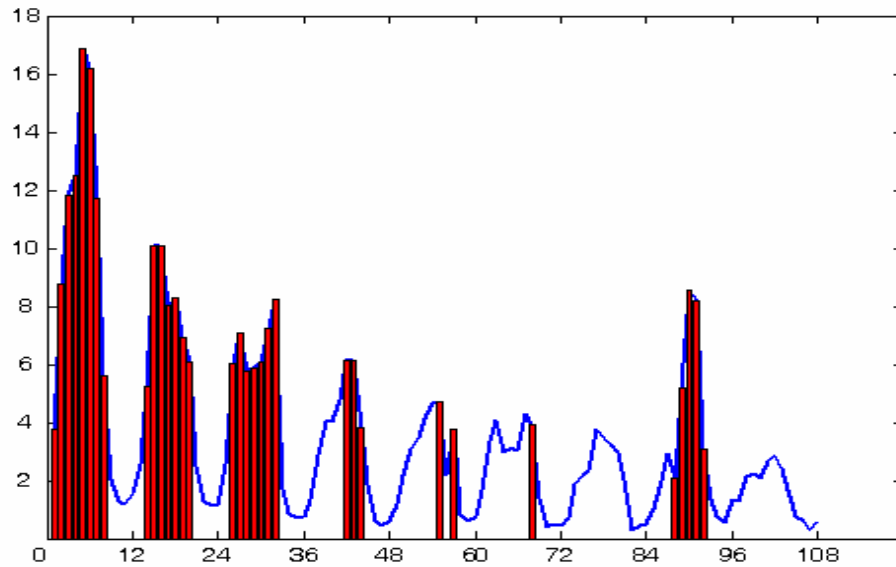
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