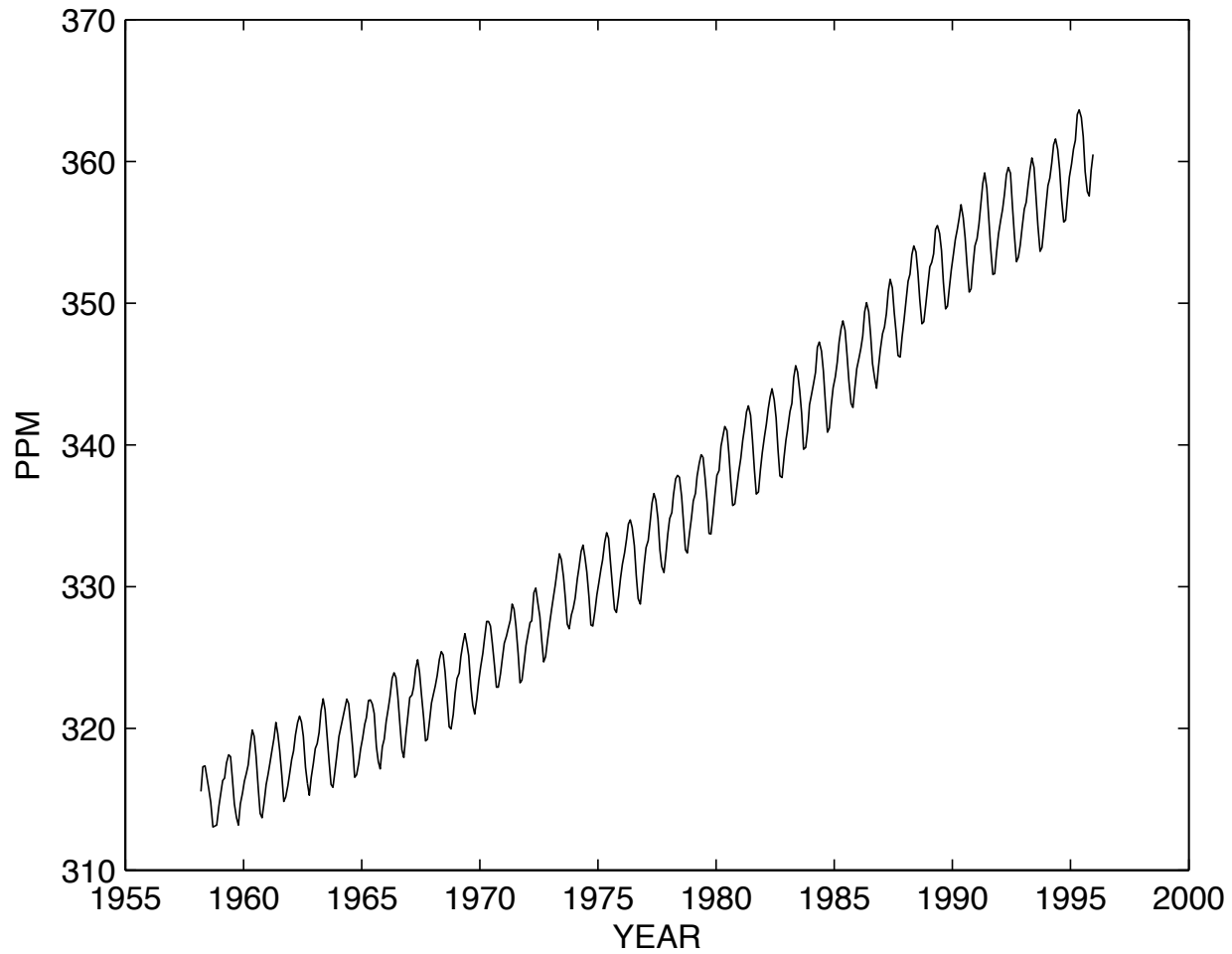
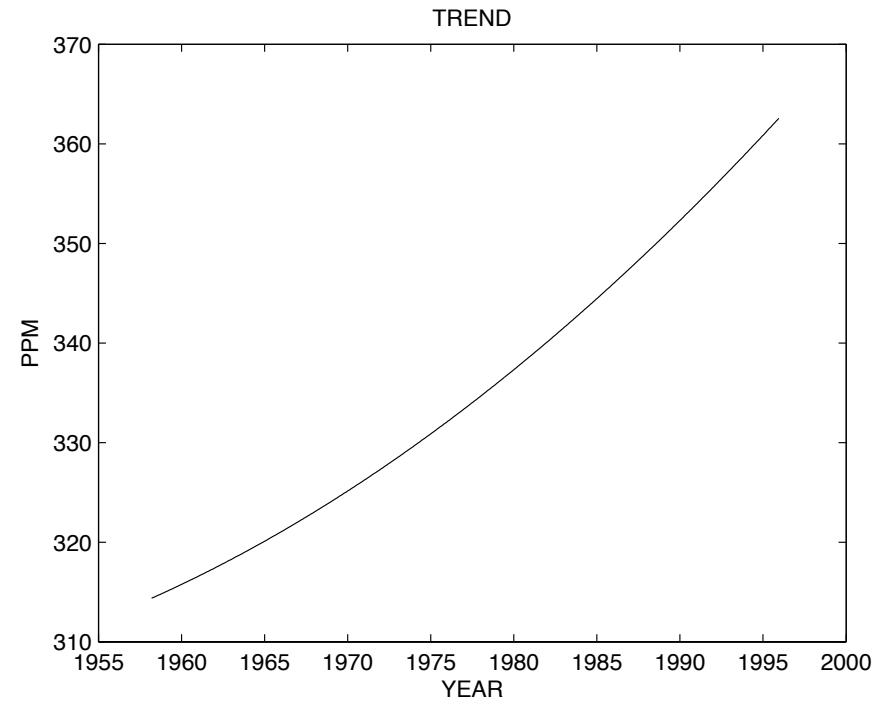
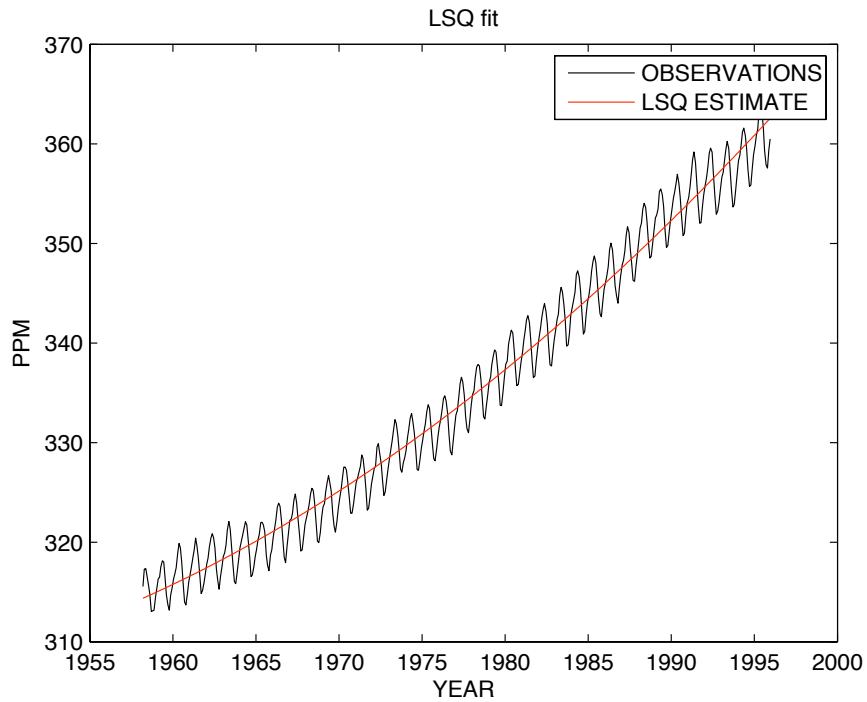


CO2 Keeling Curve and Muana Loa





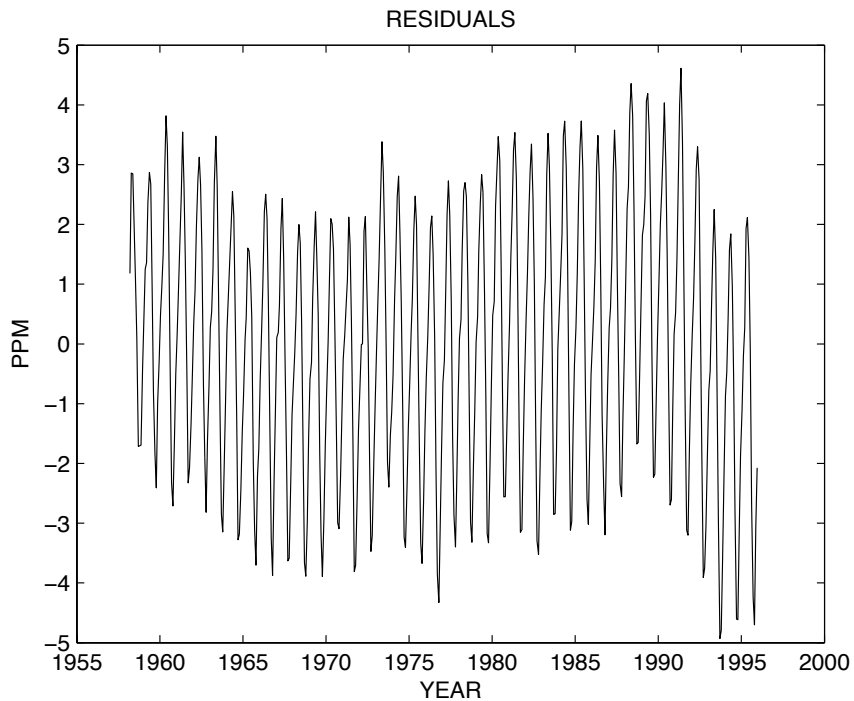
$$\hat{y}(t) = a + bt + ct^2$$

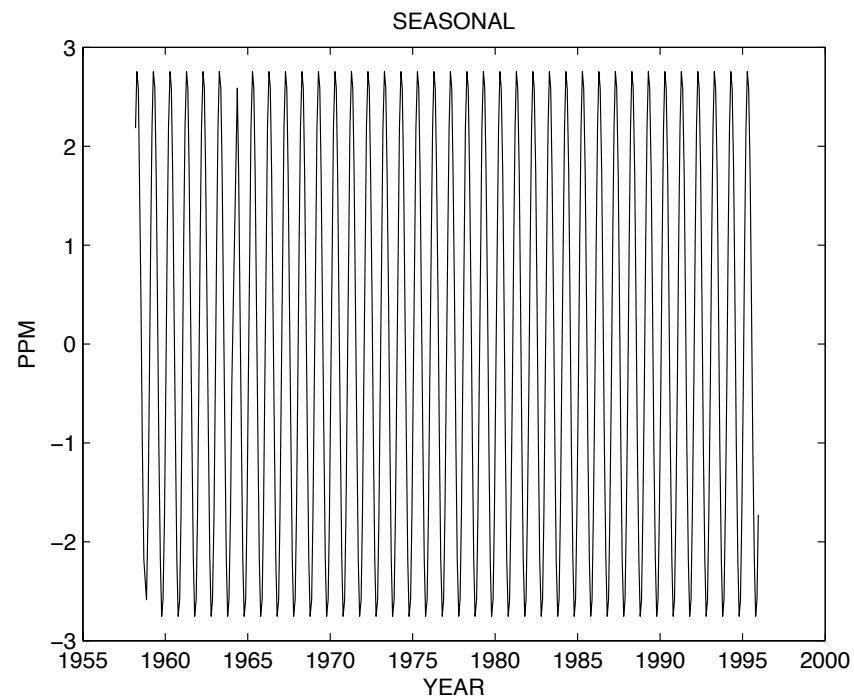
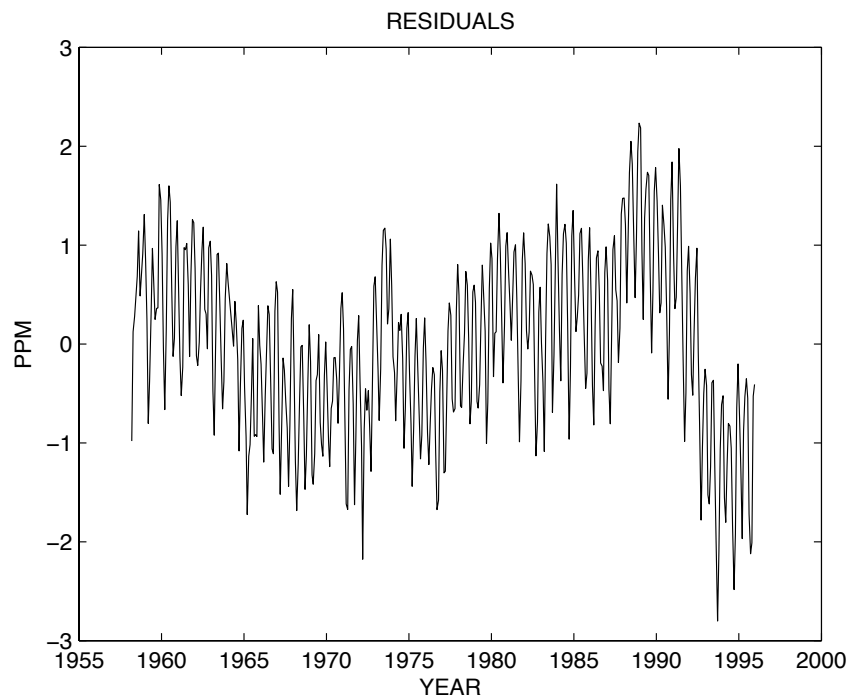
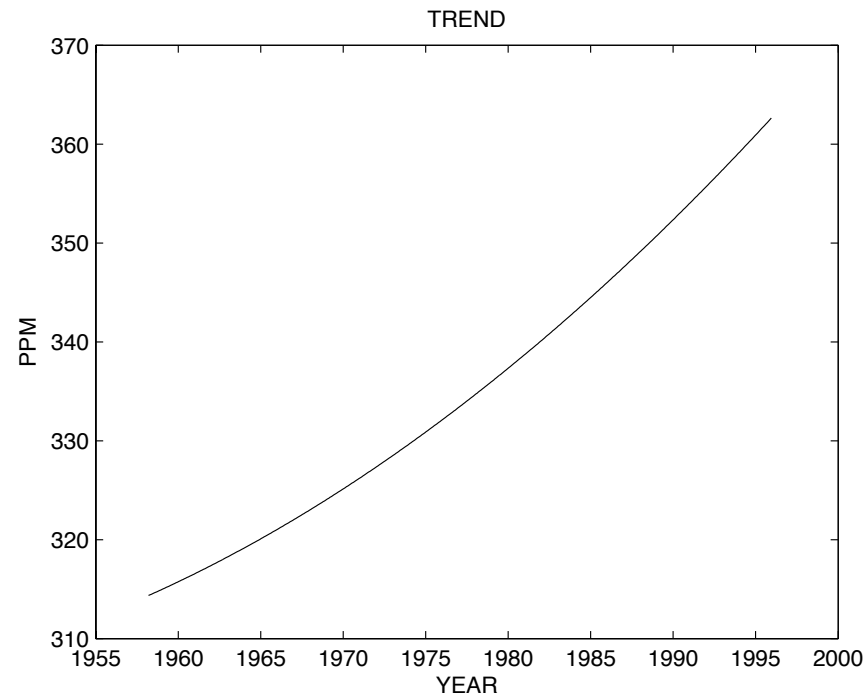
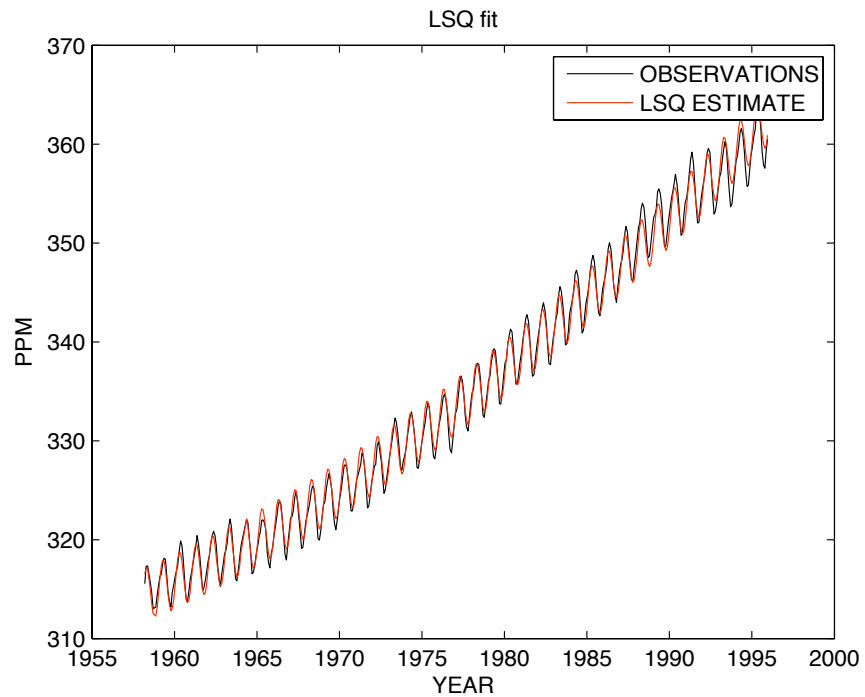
$$\begin{cases} a = 314.2 \\ b = 0.061 \\ c = 1.0e - 4 \end{cases}$$

$$\langle n^2 \rangle = 2$$

$$J = \sum_{i=1}^N n_i^2 = 523$$

$$\text{Chi-Square } \langle J \rangle = 446$$





Fitting 2 different models

$$\hat{y}(t) = a + bt + ct^2$$

$$\begin{cases} a = 314.2 \\ b = 0.061 \\ c = 1.0e - 4 \end{cases}$$

$$\langle n^2 \rangle = 2$$

$$J = \sum_{i=1}^N n_i^2 = 523$$

$$\text{Chi-Square } \langle J \rangle = 446$$

$$\hat{y}(t) = a + bt + ct^2 + d \cos\left(\frac{2\pi t}{12}\right) + e \sin\left(\frac{2\pi t}{12}\right)$$

$$\begin{cases} a = 314.2 \\ b = 0.061 \\ c = 1.0e - 4 \end{cases}$$

$$\langle n^2 \rangle = 0.1$$

$$J = \sum_{i=1}^N n_i^2 = 35800$$

$$\text{Chi-Square } \langle J \rangle = 446$$