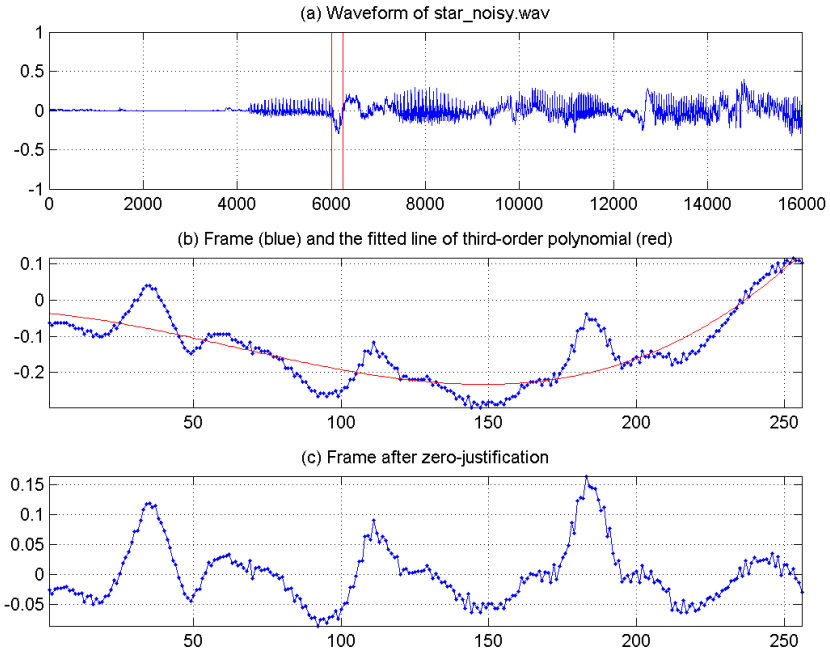
Assignment #2 (1)

- Due date: Mar. 5 (Wed.) 23:59

– **Zero justification via polynomial fitting**: During speech recording, it is likely that the recorded speech signals will oscillate around a non-zero time-varying value due to several reasons, including static effects, breath over the mic, and 50Hz AC voltage signals. To avoid such drifting within a frame, a simple method is to identify the time-varying zero curve via polynomial fitting, and remove the drifting by subtracting the curve from the original frame. Here is an example of such a situation when the order of the fitting polynomial is 3:



Assignment #2 (2)

- Write a function frameZeroJustify.m to perform such zero-justification for a given frame matrix, with the following usage:

```
frameMat2 = frameZeroJustify(frameMat, polyOrder);
```

- where "frameMat2" is the output frame matrix, "frameMat" is the input frame matrix, and "polyOrder" is the order of the fitting polynomial. (Note that in frameMat and frameMat2, each column is a frame of audio signals.)

- the star_noisy.wav would be provided in iLearn2.

- Hints:
  - The process of "zero justification" is perform on each frame independently.
  - To avoid numerical error, you'd better perform z-normalization on the x-axis data for polynomial fitting first.
  - Related MATLAB commands: polyfit, polyval, mean, std, etc.

Assignment #2 (3)

- Due date: Mar. 5 (Wed.) 23:59
  - Recordings of digits and letters
  - Record utterances for speaker verification
    - T06206 (your student ID)
    - go Google
    - hi Siri
    - Y-I-F-E-N-L-I-U (your name in Pinyin)
    - R-E-C-O-G-N-I-T-I-O-N
    - pay with 20 dollars
    - open the gate
    - Feng Chia University
    - 2451-7250
    - open the iLearn2 login page
    - set the clock to 5:30 a.m.
    - good morning, ladies and gentlemen
    - send a memo to my mail box