

# 1 Computing Cycling Scores

Cell cycle scores are generated using the microarray expression data downloaded from the websites mentioned in the paper.

For each gene  $i$ , the score  $S_i$  is computed as follows

1. Perform FFT on the expression time series.
2. Find the highest peak in the spectrum within  $\pm 20\%$  of the cell cycle period. Denote this quantity as  $A_i$ .
3. Calculate the area in the spectrum graph that falls within the  $\pm 20\%$  of the cell cycle period. Denote it as  $B_i$ .
4. the score is computed as  $\alpha \log A_i + \beta \log B_i$ , in which  $\alpha$  and  $\beta$  are chosen to make  $\alpha \log A_i$  and  $\beta \log B_i$  have the same variance.
5. If a gene has more than one time series from multiple experiments, the median of the scores are used as the gene's final score.