Homework 6

1. Given a matrix $A = \begin{bmatrix} 0 & 3 & 4 & 5 & 2 \\ 3 & 0 & 1 & 6 & 8 \\ 4 & 1 & 0 & 7 & 9 \\ 5 & 6 & 7 & 0 & 10 \\ 2 & 8 & 9 & 10 & 0 \end{bmatrix}$ create a filtration $A_0 \subseteq A_1 \subseteq \dots \subseteq A_k = A$

2. Let $B = A + \begin{bmatrix} 0 & 1 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 & 1 \\ 1 & 1 & 0 & 1 & 1 \\ 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 0 \end{bmatrix}$ and create a filtration.

How do the filtrations of A and B compare?

3. A, B are both symmetric so they correspond to weighted graphs. Dr