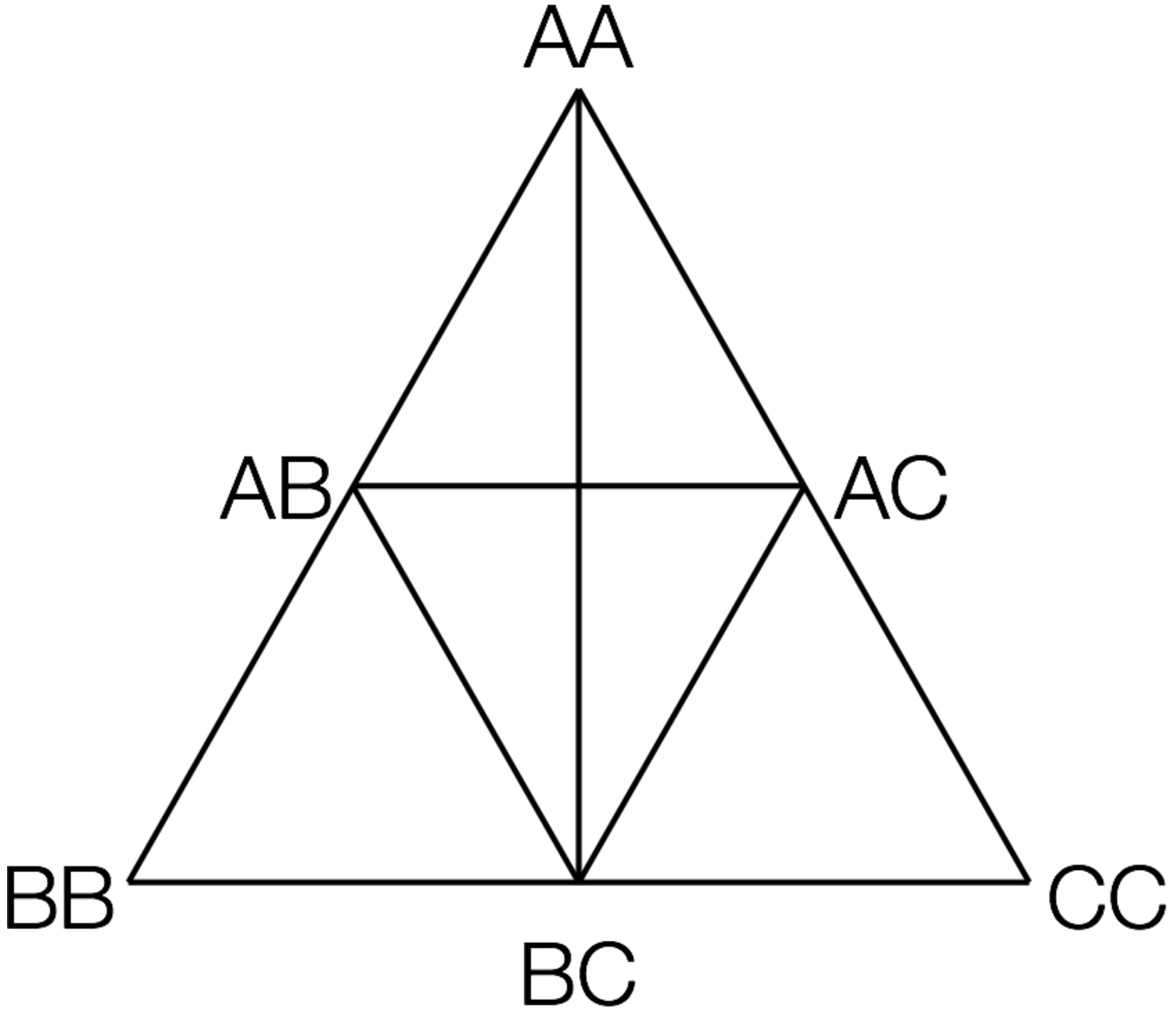
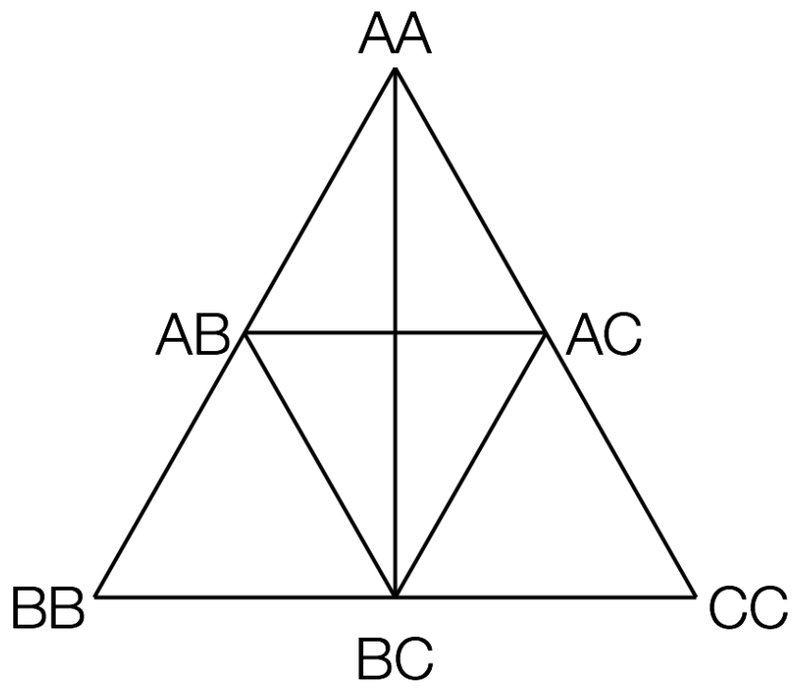

AA
AB
AC
BB
CC
BC

$$D = \begin{bmatrix} 0 & \delta_{12}^2 & \delta_{13}^2 & \cdots & \delta_{1N}^2 \\ \delta_{21}^2 & 0 & \delta_{23}^2 & \cdots & \delta_{2N}^2 \\ \delta_{31}^2 & \delta_{32}^2 & 0 & \cdots & \delta_{3N}^2 \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \delta_{N1}^2 & \delta_{N2}^2 & \delta_{N3}^2 & \cdots & 0 \end{bmatrix}$$

Metric used for:

- Individual distances
- AMOVA
- Spatial Autocorrelation



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$$D = \begin{bmatrix} 0 & \delta^2_{12} & \delta^2_{13} & \dots & \delta^2_{1N} \\ \delta^2_{21} & 0 & \delta^2_{23} & \dots & \delta^2_{2N} \\ \delta^2_{31} & \delta^2_{32} & 0 & \dots & \delta^2_{3N} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \delta^2_{N1} & \delta^2_{N2} & \delta^2_{N3} & \dots & 0 \end{bmatrix}$$

$$SSD_{Total} = \frac{\sum_{i=1}^{N} \sum_{j=1}^{N} \delta_{ij}^2}{2N - 1}$$

$$SSD_{Within} = \sum_{k=1}^{K} \left[\frac{\sum_{i=1}^{N_k} \sum_{j=1}^{N_k} \delta_{ij}^2}{2N_k - 1} \right]$$

$$SSD_{Among} = \sum_{k=1}^{K} \sum_{l \neq i}^{K} \frac{\sum_{i=1}^{N_k} \sum_{j=1}^{N_l} \delta_{ij}^2}{N_k + N_l}$$