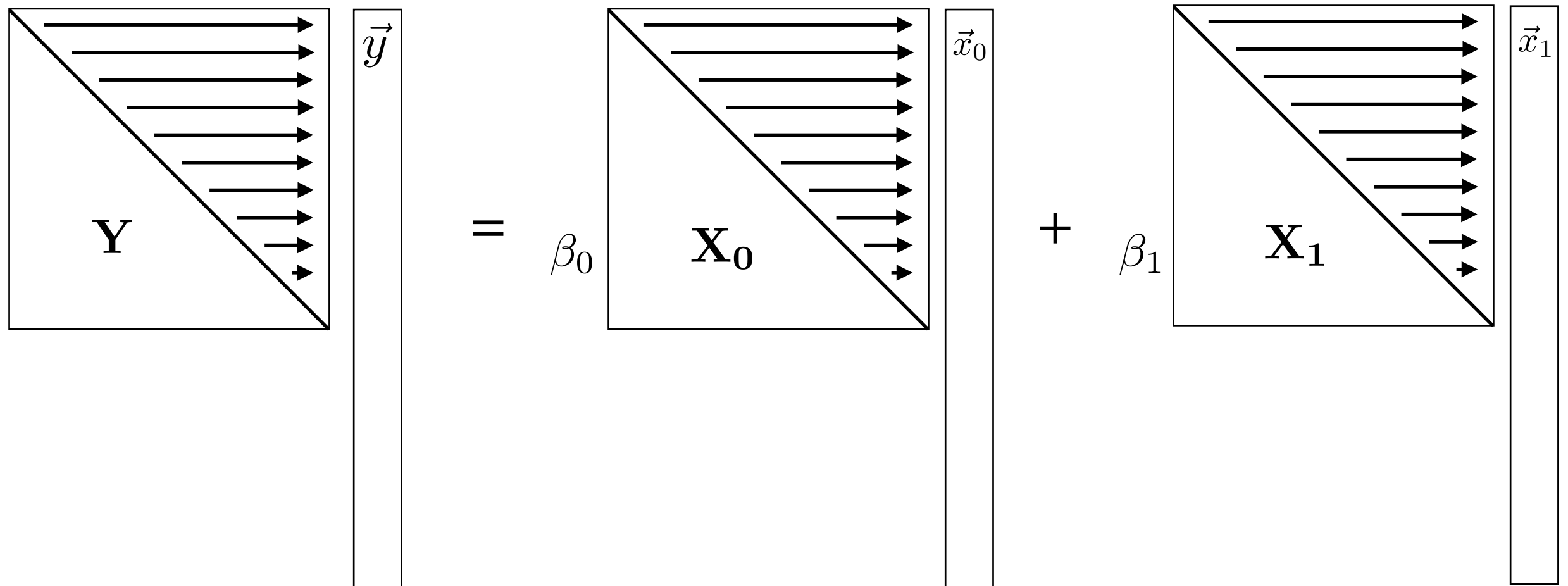


# Multiple Regression on Matrices

Builds regression model on distance matrices



The diagram illustrates a multiple regression model on distance matrices. It consists of three main parts: a response matrix  $\mathbf{Y}$  and a vector  $\vec{y}$ , an equals sign, a predictor matrix  $\mathbf{X}_0$  and a vector  $\vec{x}_0$ , a plus sign, another predictor matrix  $\mathbf{X}_1$  and a vector  $\vec{x}_1$ , and a coefficient  $\beta_1$ . Each matrix is represented by a square with a diagonal line from the top-left to the bottom-right, and horizontal arrows of varying lengths pointing to the right, representing distance values. The vectors are represented by vertical rectangles.

$$\mathbf{Y} \quad \vec{y} = \beta_0 \mathbf{X}_0 \quad \vec{x}_0 + \beta_1 \mathbf{X}_1 \quad \vec{x}_1$$

# Iterative Model Building

## Potential Spatial **Bias**

- Phylogeography
- Range Expansion



Ecological Correlates

