Scheme 2 (note the nuances of this from the above):

Given x_0 and y_0, start iterations.

$$\begin{cases} x_{n+1} = x_n + \underbrace{x_n(\alpha_x - \beta_x y_n)}_{x_n'} \Delta t \\ y_{n+1} = y_n \underbrace{- y_n(\alpha_y - \beta_y x_{n+1})}_{y_n' \text{ with new } x_{n+1}} \Delta t \end{cases}$$

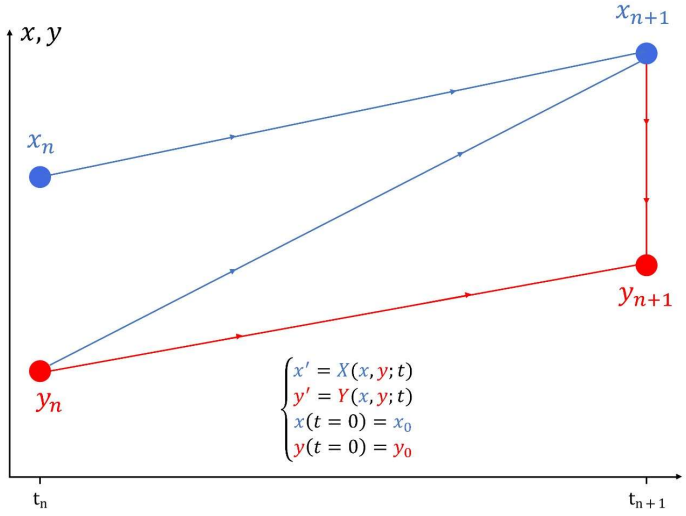

Figure 2. Using the latest "x" to advance "y", explicitly.