

DLN 1.2.1

Case 1.1: Suppose $\lambda = 2$. Then

$$x_e = \frac{\lambda - 1}{\lambda} = \frac{2 - 1}{2} = 1/2,$$

$$\text{and } \lambda(1 - 2x_e) = 2[1 - (2)(1/2)] = 0.$$

In this case, the point $x = x_e + \delta$ is

$$\text{sent to } \bar{x} = x_e - \lambda \delta^2;$$

consequently the convergence to x_e is quadratic, and therefore very rapid.