On a Family of First-Order Piecewise Linear Systems.

We will give a detailed analysis, complete with generalizations, open problems and conjectures, of the global character of the solutions of the piecewise linear difference equations

$$\begin{cases} x_{n+1} = |x_n| + ay_n + b & n = 0, 1, \ldots \\ y_{n+1} = x_n + c|y_n| + d \end{cases}$$

where the initial condition \((x_0, y_0) \in \mathbb{R}^2\) and the parameters \(a, b, c, d \in \{-1, 0, 1\}\). (Received July 31, 2015)