Nonlinear System (Two Coupled Neurons)

\[
\dot{v}_1 = -5v_1 + 17 \tan^{-1}(v_1) - 13 \tan^{-1}(v_2)
\]
\[
\dot{v}_2 = -v_2 + 4 \tan^{-1}(v_1) - 5 \tan^{-1}(v_2)
\]

Figure 1: Direction field and sample trajectories for two neuron system.