Phase Space Portraits with Separatrix

Legend:
- $\theta_0 = 0.1$ rad
- $\theta_0 = 0.5$ rad
- $\theta_0 = 1.0$ rad
- $\theta_0 = 2.0$ rad
- $\theta_0 = 3.0$ rad
- Separatrix

x-axis: Angle θ (rad)
y-axis: Angular velocity ω (rad/s)