

Model: 2-D linear dynamical system

$$\dot{x} = Ax \quad A = \begin{bmatrix} a_1 & a_2 \\ a_3 & a_4 \end{bmatrix}$$

$$x_{v_1}(t) = C_1 e^{(\alpha_1 + j2\pi\omega_1)t} \quad \alpha_1 \geq \alpha_2$$

Behavior: band of oscillations

$$E[\alpha_1] = 0 \quad E[\omega_1] = 1Hz$$

$$Var(\alpha_1) = 1 \quad Var(\omega_1) = .025Hz^2$$

DSN:

$$z = \begin{bmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{bmatrix}$$

